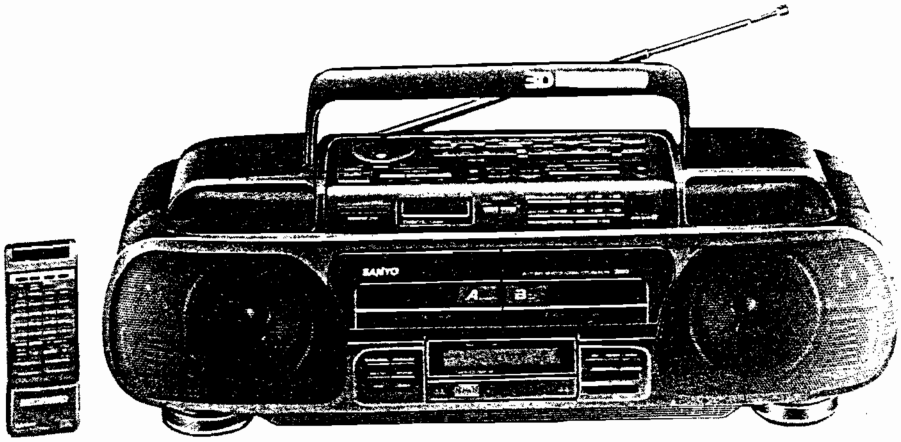
SANYO

Service Manual

Portable CD/Stereo Radio/Double Cassette Recorder

MCD-Z60F (GENERAL)



Specifications

CASSETTE SECTION

Recording system	AC bias, 4 track
Erasing system	AC erase
Tape speed	4.8 cm/sec.
Fast forward time	110 sec (C-60) (TAPE A)
Rewind time	110 sec (C-60) (TAPE B)
Frequency response	40 – 14,000 Hz (Normal/CrO2 tape) 40 – 16,000 Hz (Metal tape)

CD SECTION

Channels	2 channels
Frequency response	20 – 20,000 Hz (+1/–5 dB)
Dynamic range	80 dB (1 kHz)
S/N ratio	80 dB
Channel separation	70 dB (1 kHz)
Wow & Flutter	undetectable
Sampling frequency	44.1 kHz
Quantization	16 bits linear/ch
Pick up light source	Semi-conductor laser
Pick up wave length	790 nm

RADIO SECTION

Tuning ranges	MW/AM: 531 – 1602 kHz FM: 88 – 108 MHz
Antennas	Built-in ferrite bar and telescopic rod antennas

GENERAL

Loudspeakers	12cm x 2, 4 ohms Tweeter x 2 10cm x 1, 4 ohms
Output power	80 W (P.M.P.O.)
Terminals	
Input	LINE IN 24 ohm
Output	PHONES: 32 ohms SURROUND SPEAKERS: 8 ohms

PRODUCT CODE No.
142 849 03

Power source	AC: 110 – 127/ 200 – 220/ 230 – 250V, 50 Hz/60Hz DC: 15V, 10 "D" size batteries (optional) Power failure backup: 4.5V, 3 "AA" size batteries (optional) Remote control unit: 3V, 2 "AA" size batteries (optional)
Power consumption	70W
Dimensions	692(W) x 206(H) x 267(D) mm
Weight (approx.)	9.2 kg excluding batteries

Specifications subject to change without notice.

REFERENCE No. 580356

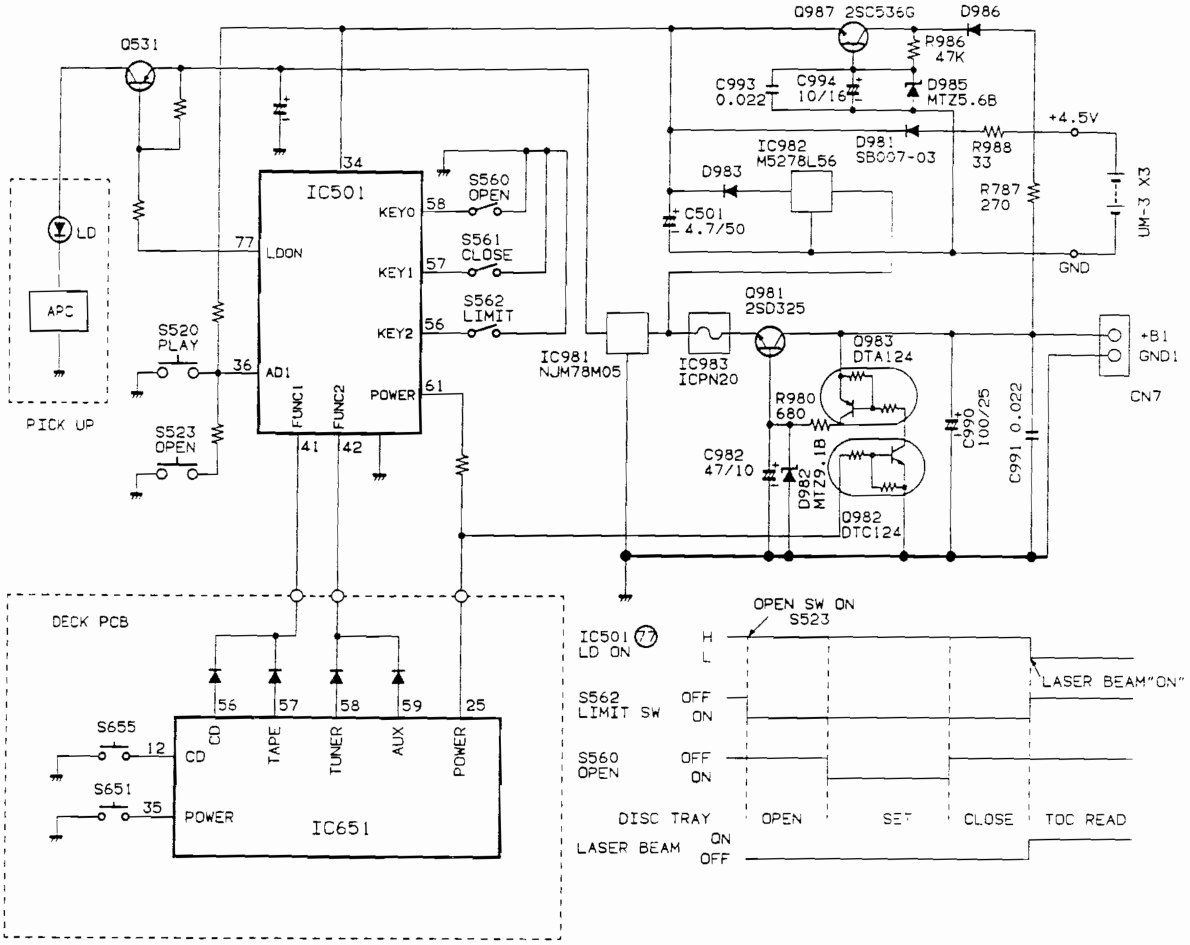
1910

LASER BEAM INFORMATION

A. CONDITIONS FOR LASER BEAM EMISSION FROM THE PICK-UP

The conditions for laser beam emission from the pick-up are the satisfaction of all three of the following points.

(a) The disc cover must be closed.
(b) The FUNCTION switch must be at the "CD" position.
(c) The POWER switch must be at the "ON" position.


Q531
LD
APC
PICK UP
S520
PLAY
S523
OPEN
IC501
34
77
LDON
36
AD1
FUNC1
FUNC2
41
42
KEY0
KEY1
KEY2
POWER
58
57
56
61
S560
OPEN
S561
CLOSE
S562
LIMIT
Q987 2SC536G
D986
R986
47K
C993
0.022
C994
10/16
D985
MTZ5.6B
+4.5V
IC982
M5278L56
D981
SB007-03
R988
33
D983
C501
4.7/50
R787
270
UM-3 X3
GND
Q981
2SD325
IC981
NJM78M05
IC983
ICPN20
Q983
DTA124
R980
680
C982
47/10
D982
MTZ9.1B
Q982
DTC124
C990
100/25
C991 0.022
+B1
GND1
CN7
DECK PCB
S655
12
CD
S651
35
POWER
56
57
58
59
25
CD
TAPE
TUNER
AUX
POWER
IC651
OPEN SW ON
S523
IC501 ⑦⑦
LD ON
H
L
LASER BEAM"ON"
S562
LIMIT SW
OFF
ON
S560
OPEN
OFF
ON
DISC TRAY
OPEN
SET
CLOSE
TOC READ
LASER BEAM
ON
OFF

KEY 0 (Pin 58) : Key input
KEY 1 (Pin 57) : Key input
KEY 2 (Pin 56) : Key input
LD ON (Pin 77) : Laser diode control output signal (LOW active)
AD 1 (Pin 36) : A/D input (PLAY/PAUSE, OPEN)
FUNC 1 (Pin 41) : Input
FUNC 2 (Pin 42) : Input
POWER (Pin 61) : Input

(1) Laser beams are emitted from the pick-up when conditions (a) - (c) are satisfied.
(2) The pick-up is moved to the innermost groove.
(3) The servos are activated.
(4) The servos are not activated if a disc is not loaded.
(5) If the TOC (Table of Contents) is not read, the LCD displays "NO DISC", and the laser beam emission stops.
(6) Laser beams will not thereafter be emitted unless and until conditions (a) - (c) are all once again satisfied.
(7) If a disc is loaded, the total number of tracks on the disc, and the total play time, will be displayed, and there is no emission of laser beams.
(8) When the PLAY/PAUSE button is then pressed, laser beams will be emitted until there is a change to the STOP mode.

LASER BEAM INFORMATION

B. OPERATION

(a) It will be assumed here that the compact disc is not set.

(b) Switch ON the Power and set the FUNCTION switch to the "CD" position.

(c) Press the OPEN/CLOSE switch (S523) to open the disc tray. The OPEN switch (S560) will be switched ON at this time.

(d) Place a compact disc in the tray.

(e) Press the OPEN/CLOSE switch (S523). The disc tray will close. The OPEN switch (S560) will be switched OFF at this time.

(f) When the disc is completely loaded, the LIMIT switch (S562) will be switched from ON to OFF. At this time, the LD ON (pin 77) of IC501 will change from HIGH level to LOW level, and transistor Q351 will be switched ON, DC5V will be supplied to the power-supply circuit.

(g) A voltage of +5V is input to the APC (Automatic Power Control) circuit of the pick-up, and laser beams are emitted.

(h) When the disc begins rotation and the TOC (Table of Contents) is read, the LCD displays the total number of tracks and the total play time.
Then, the disc's rotation stops, LD ON changes from LOW level to HIGH level, Q351 is switched OFF, and the laser beams stop.

(i) When the PLAY/PAUSE key is pressed once again, LD ON changes again from HIGH level to LOW level, Q351 is switched ON, and laser beams are emitted.

LASER BEAM SAFETY PRECAUTIONS

Do not look directly at the laser beam coming from the pick-up or allow it to strike against your fingers, skin, etc.

Do not apply power if there is a broken part in the laser output section of the pick-up.

Structural Safety Interlock

This model has a disc chuck lever and top lid. This disc chuck lever and top lid prevent to expose the laser beam for users.

HANDLING THE PICK-UP

1. **Shipping and storage cautions**
   a. The pick-up must be stored in a conductive bag until immediately prior to its use.
   b. Do not drop it or subject it to impacts.
2. **Repair cautions**
   a. When handling the pick-up, be careful not to give it undue force or shock by your hands. Otherwise the pick-up may malfunction or the PCB may be cracked.
   b. The pick-up which has been minutely adjusted before shipment as one part. Never touch and move the adjusting points and setscrews of the pick-up unless otherwise described in the item of adjustment to avoid damage.

c. A strong magnet is used in the pick-up.
Do not bring a magnet or other magnetized object near to it.

d. Cleaning the lens

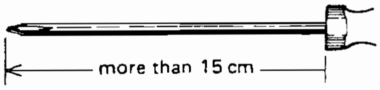
* If dust gets on the lens, clean it away by using an air brush such as used for a camera lens.

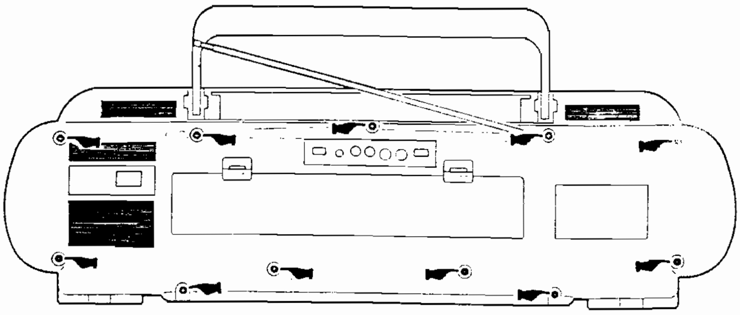
* The lens is held in place by a spring.
If the center of the lens is dirty, carefully clean it using cotton swab moistened with isopropyl-alcohol. Since special coating is made on the surface of the lens which is made of plastics, do not use other kind of alcohol and cleaning fluid to prevent damage to the lens. Also, be careful not to bend the lens spring when cleaning.

HOW TO DISASSEMBLE THE SET

- Remove the compact disc and cassette tape if there should be one on the disc tray or in the cassette lid.
- Switch the power OFF, and unplug the AC power cord from an AC outlet.
- All wiring should be returned to the original position after work is completed.

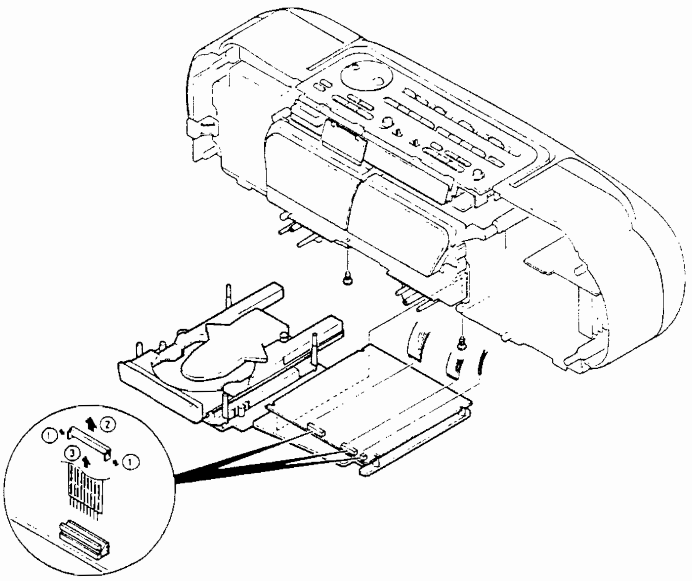
(1) Removal of rear cabinet
- Repair the (+) screwdriver.



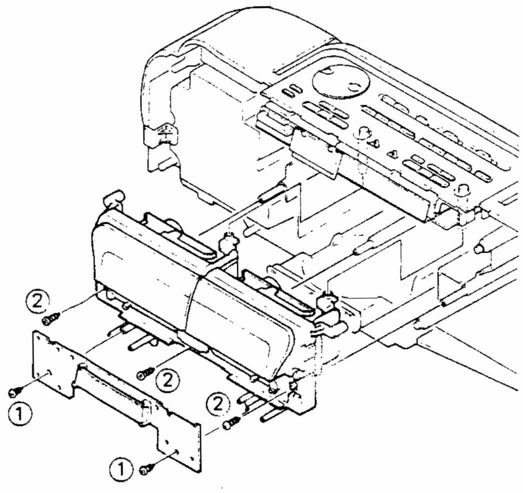


HOW TO DISASSEMBLE THE SET

(2) Removal of CD block

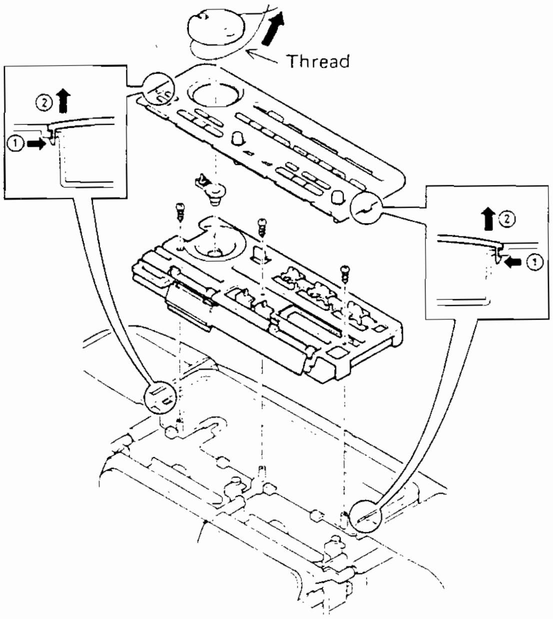


(3) Removal of Tape mechanism block



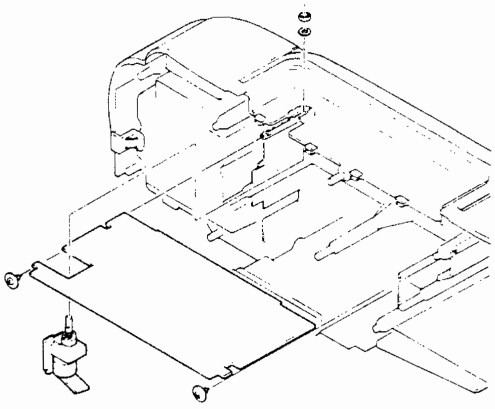
NOTE: Lead wire should be dressed to prevent to touch to Q914.

(4) Removal of Deck panel block



(5) Removal of Amp. PCB

- Remove the electrical volume before the Amp. PCB removal.

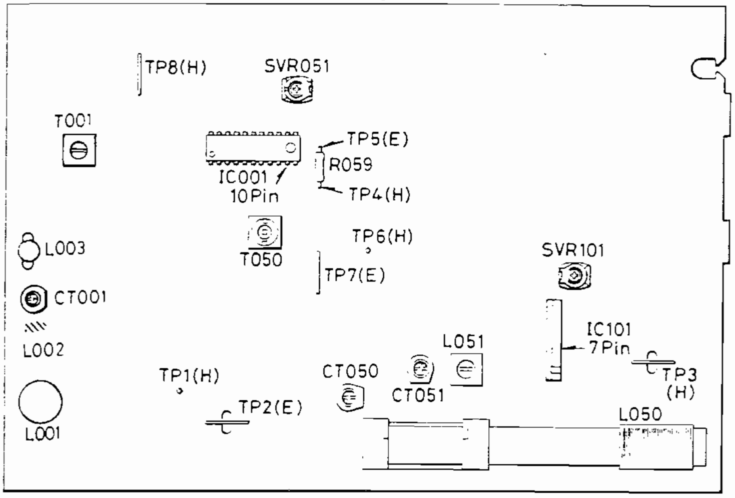


TUNER ADJUSTMENT

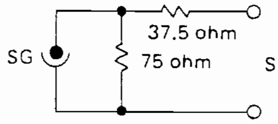
- Use a plastic screwdriver for adjustment.
- Adjust the intermediate frequency of FM to the frequency of ceramic filter.
- Make adjustments without removing the tuner printed-circuit board from the cabinet.

Supply voltage	: DC 15V (SET)		TONE	: OFF
Speaker impedance	: 4 ohm		BASS	: MIN
Standard Output	: 50mW (440mV)		SURROUND	: OFF
Function selector	: RADIO			

TUNER P.C.B



FM DUMMY ANTENNA



(1) FM Band

Antenna: 75 ohm open SG direct, Standard modulation frequency: 400Hz, Deviation: ±22.5kHz (Mono)

ITEMS		FREQUENCY INDICATED POSITION	INPUT CONDITIONS		OUTPUT CONDITIONS		ADJUSTING PARTS	STANDARDS
			MEASURING INSTRUMENTS	CONNECTIONS	MEASURING INSTRUMENTS	CONNECTIONS		
IF	V-curve	98.0 MHz	FM sweep generator (10.7 MHz non modulation)	TP1 (H) TP2 (E)	FM Oscilloscope	IC001-10 (H) TP7 (E)	T001	Max.
	S-curve						T050	Symmetrical Wave Max.
Tuning Coverage	Low	87.5 MHz	—	—	Digital Voltmeter	TP8 (H) TP7 (E)	—	1V
	High	108.0 MHz					L003	8.0±0.05V
Tracking	Low	90.0 MHz	FM-SG (20dB)	TP1 (H) TP2 (E)	VTVM Oscilloscope	Speaker out (L or R)	L001 L002	Max.
	High	106.0 MHz					CT001	
IF S-curve (Distortion factor)		98.0 MHz	FM-SG (60dB)	TP1 (H) TP2 (E)	Digital Voltmeter	TP4 (H) TP5 (E)	T050	0±0.05V
S.D. (Station Detector)		98.0 MHz	FM-SG (26dB)	TP1 (H) TP2 (E)	Digital Voltmeter	TP6 (H) TP7 (E)	SVR051	Less than 2V
VCO (19 kHz)		98.0 MHz	FM-SG (60dB)	—	Counter	IC101-7 (H) TP3 (E)	SVR101	19kHz±100Hz

* Stereo modulator: Deviation Main (L + R) . . . ±22.5 kHz
Pilot (19kHz) . . . 6.75 kHz

(2) MW Band

Antenna: IRE Loop antenna, Standard modulation: 400Hz 30%

ITEMS		FREQUENCY INDICATED POSITION	INPUT CONDITIONS		OUTPUT CONDITIONS		ADJUSTING PARTS	STANDARDS
			MEASURING INSTRUMENTS	CONNECTIONS	MEASURING INSTRUMENTS	CONNECTIONS		
IF	—	455 kHz	—	—	—	—	—	NOT ADJUST CHECK ONLY
Tuning Coverage	Low	531 kHz	—	—	Digital Voltmeter	TP8 (H) TP7 (E)	L051	1.3V±0.02V
	High	1602 kHz					—	7.2V
Tracking	Low	603 kHz	AM-SG (74dB)	Loop ANT.	VTVM Oscilloscope	Speaker out (L or R)	L050	Max.
	High	1404 kHz					CT050	

TAPE DECK ADJUSTMENT

(a) CHECKING THE MECHANISM TORQUES

- Clean the head, capstan and pinch roller before making any measurement.
- Check during both normal and reverse playback.

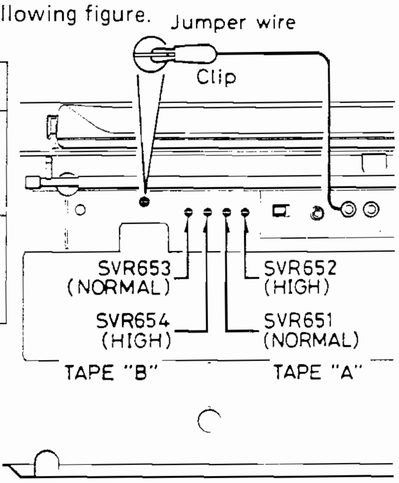
TAPE "A" & TAPE "B"

Measurement	Rewind torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A(FWD) PLAY:TW-2121A(REV) F. FWD/REW:TW-2231	PLAY:TW-2111A(FWD) PLAY:TW-2121A(REV)	Drive—power cassette TW-2412(FWD) TW-2422A(REV)
PLAY	30 ~ 60gr·cm	2 ~ 5gr·cm	80gr or more
F.FWD/REW	55 ~ 140gr·cm	–	–
REW	55 ~ 140gr·cm	–	–

(b) TAPE SPEED ADJUSTMENT

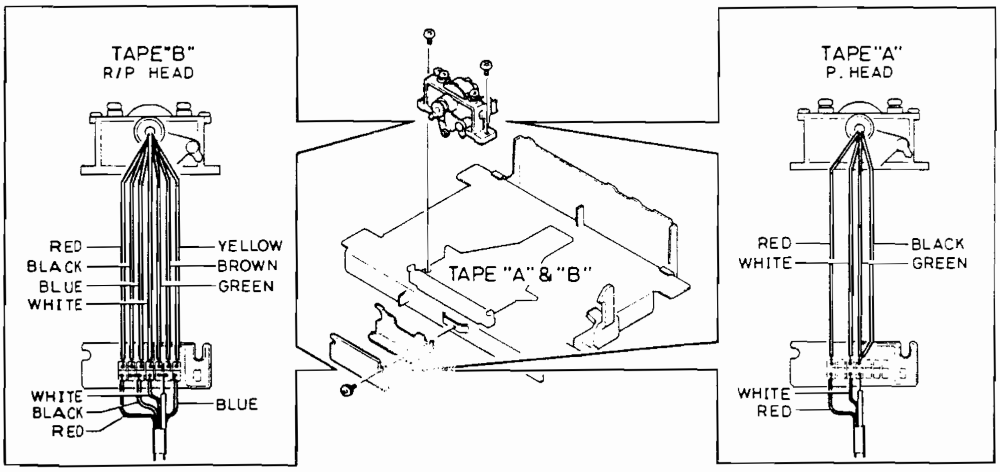
- Prepare the 2 kind test tape (Normal: MTT-111 or equality parts. (3000 Hz)
  High: TCW-211 or equality parts. (1500 Hz)
- Adjustment should be made at the ending portion of the tape.
- High speed adjustment should be made before doing normal speed adjustment. When high speed adjustment is made again, normal speed adjustment must also be made.
- For high speed adjustment, plug the short-plug to the jumper leads as shown the following figure.

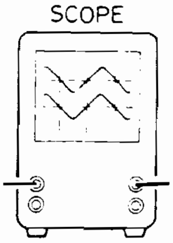
Step	Speed	Deck	Test Tape	SVR	Tape Counter
1	High	TAPE A	TCW-211 (1500Hz)	SVR652	3000Hz±10%
2		TAPE B		SVR654	
3	Normal	TAPE A	MTT-111 (3000Hz)	SVR651	3000Hz±5Hz
4		TAPE B		SVR653	


Jumper wire
Clip
SVR653 (NORMAL)
SVR652 (HIGH)
SVR654 (HIGH)
SVR651 (NORMAL)
TAPE "B"
TAPE "A"

(c) HEAD REPLACEMENT AND AZIMUTH ADJUSTMENT

- After replacement, demagnetize the heads by using a head eraser.
- Be sure to clean the heads before attempting to make any adjustments.
- Be sure both channels (1 and 2) are the same level (Using a dual-Phenomenon oscilloscope).
- After completion of the adjustment, use threadlock (TB-1401B) to secure the azimuth adjustment screw.


TAPE"B"
R/P HEAD
RED
BLACK
BLUE
WHITE
YELLOW
BROWN
GREEN
WHITE
BLACK
RED
BLUE
TAPE "A"&"B"
TAPE"A"
P. HEAD
RED
WHITE
BLACK
GREEN
WHITE
RED



- Phase alignment
  (1) Prepare a dual-phenomenon oscilloscope.
  (2) Set so that the left and right ranges of the oscilloscope are the same.
  (3) Play the test tape.
  (4) Adjust so that the waveforms for the left and right channels are in alignment, as shown in the illustration.

TAPE DECK ADJUSTMENTS

(1) Load a test tape (VTT-703, etc.: 10 kHz) for azimuth adjustments.

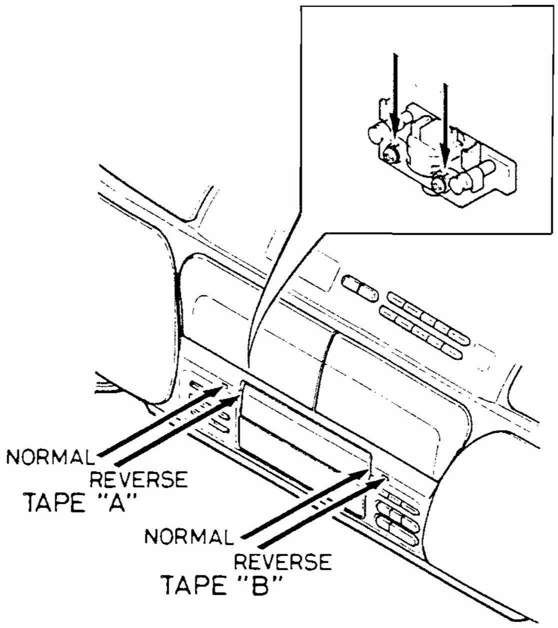
(2) Press the PLAY button (normal playback).

(3) Use a flat-tip (—) screwdriver to turn the screw for normal azimuth adjustsment so that the left and right outputs are maximized at the same phase during normal playback.

(4) Press the tape direction lever.

(5) Play the tape in the reverse mode.

(6) Use a flat-to-(—) screwdriver to turn the screw for reverse azimuth adjustment so that the left and right outputs are maximized at the same phase during reverse playback.

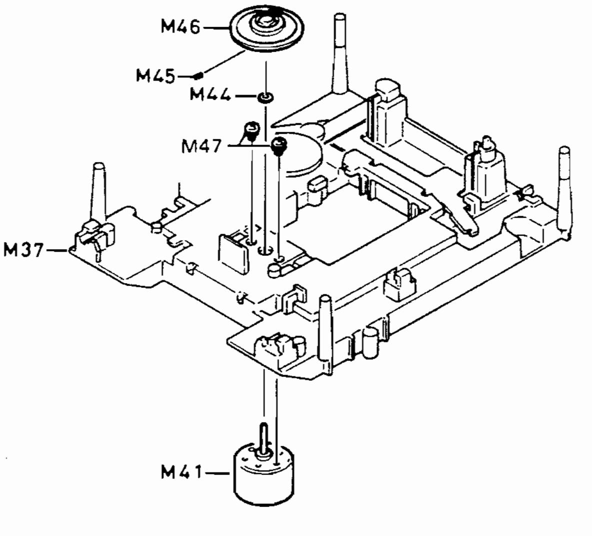


HOW TO REASSEMBLE THE COMPACT-DISC PLAYER

A. REMOVAL OF THE COMPACT-DISC PLAYER SECTION FROM THE UNIT (Refer to "HOW TO DISASSEMBLE THE SET" on page 3.)

(a) Replacement of the spindle motor

- First, prepare the new turntable and new special washer for replacement.



- Prepare dial-type calipers.

(1) Remove the screw (M45) that holds the turntable (M46).

(2) The attached bonding material can be dissolved by using a 60W soldering iron to heat the shaft at the lower part of the turntable for about one minute.

(3) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.

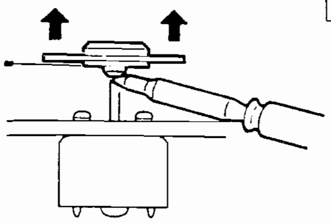
(4) Remove the two screws (M47) and remove the spindle motor (M41).

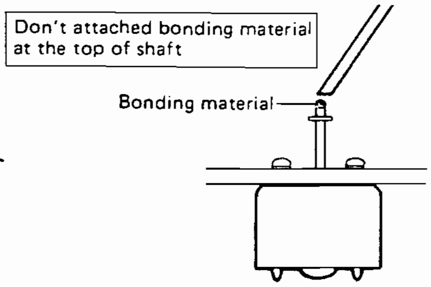
(5) Attach the special washer (M44) to the spindle motor.

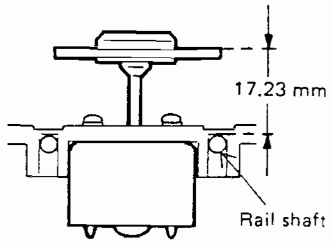
(6) Apply a small amount of a mixture of the "Three Bond 2001" and "2015F" bonding materials to the motor's shaft.

(7) Install the turntable as shown in the figure.

(8) Secure the turntable by pressing gently.
Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.







HOW TO REASSEMBLE THE COMPACT-DISC PLAYER

(b) Replacement and lubrication of the pick-up

(1) Before replacement of the pick-up, be sure to carefully read the section regarding the pick-up when the unit is moved or transported.

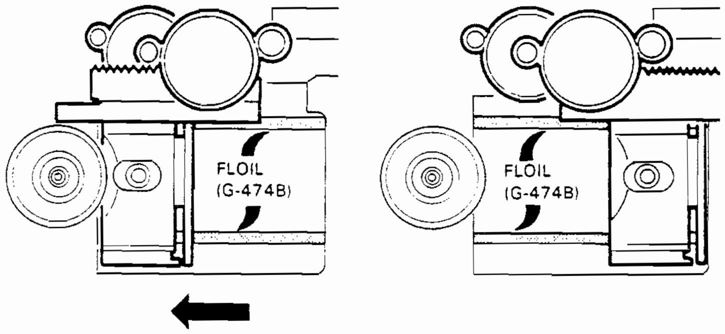
(2) Using a screwdriver or similar tool, carefully press from the lower part of the chassis (M37), the latch for the two holes shown in the figure, and then remove the two pick-up rails (M43).

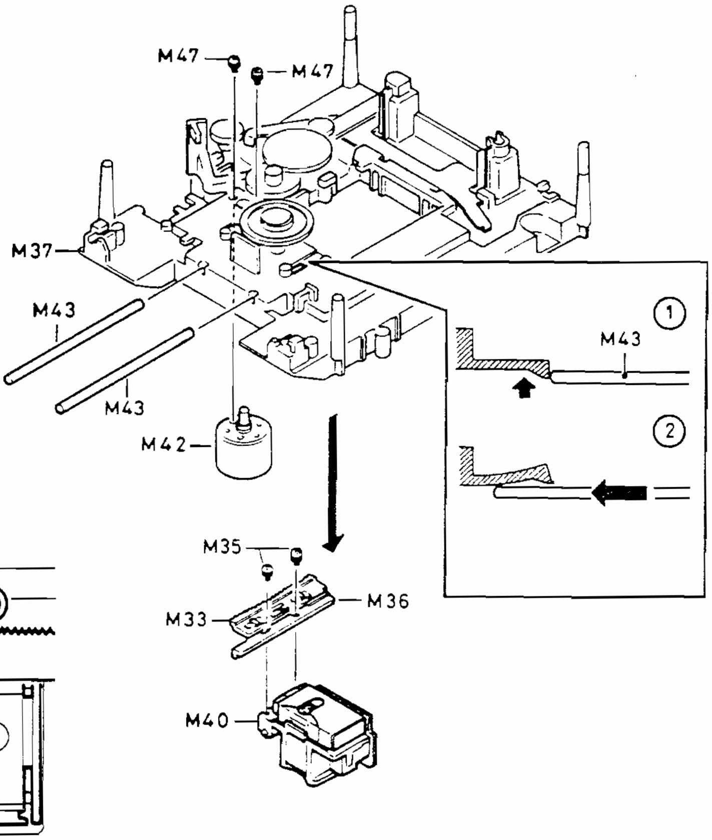
(3) If the pick-up is reconditioned or replaced, be sure to wipe the rails clean and also apply a coating of FLOIL (G-474B) to their entire circumference and entire length.

(c) Replacement of the sled motor.

(1) Remove the two pan-head screws that hold the motor, and then replace the motor.

(BE SURE, AT THIS TIME, NOT TO TOUCH THE FLOIL FOR ANY OTHER PART.)


FLOIL
(G-474B)
FLOIL
(G-474B)


M47
M47
M37
M43
M43
M42
M35
M33
M36
M40
①
M43
②

Checking the operation of the CD mechanism

(1) Disconnect the socket (for the sled motor power supply) from the printed-circuit board.

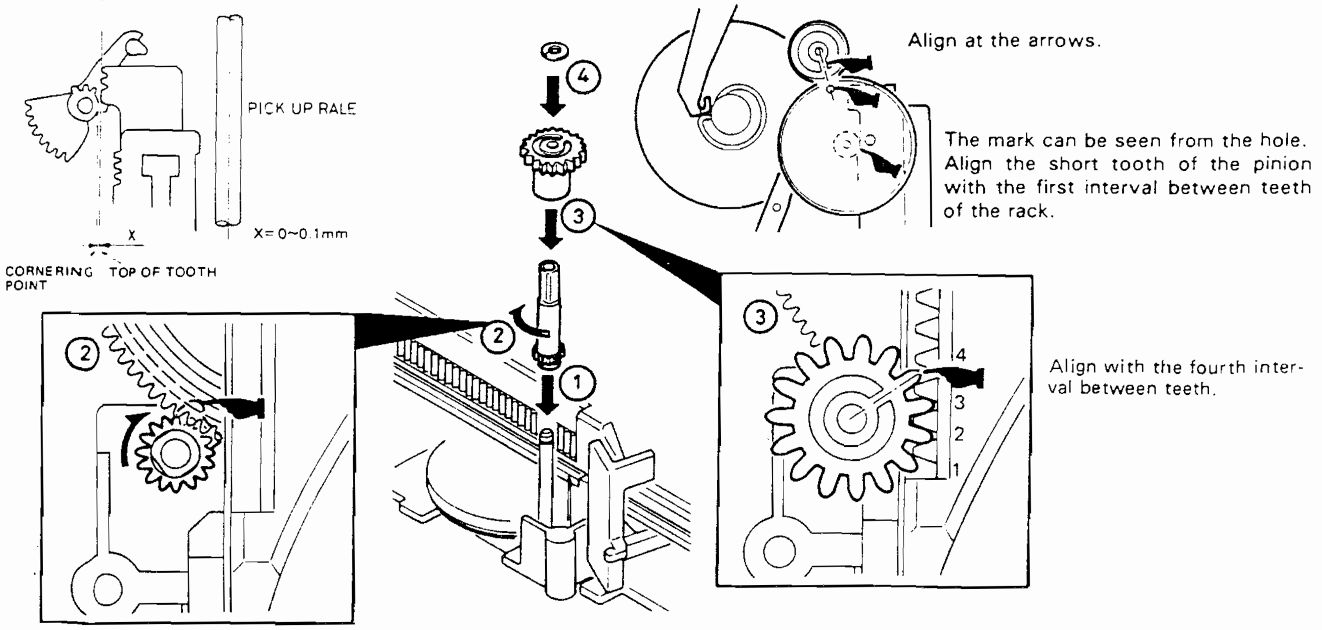
(2) Apply a voltage of DC 2.2V to the sled motor's terminal.

(3) Measure the current during sled motor operation.

- The direction of movement of the pick-up (outer groove or inner groove) can be changed by changing the battery polarity.

Direction of pick-up movement	Sled motor current
Outer groove	8 ~ 20 mA or less
Inner groove	8 ~ 20 mA or less

Installation of the pick-up transported gear

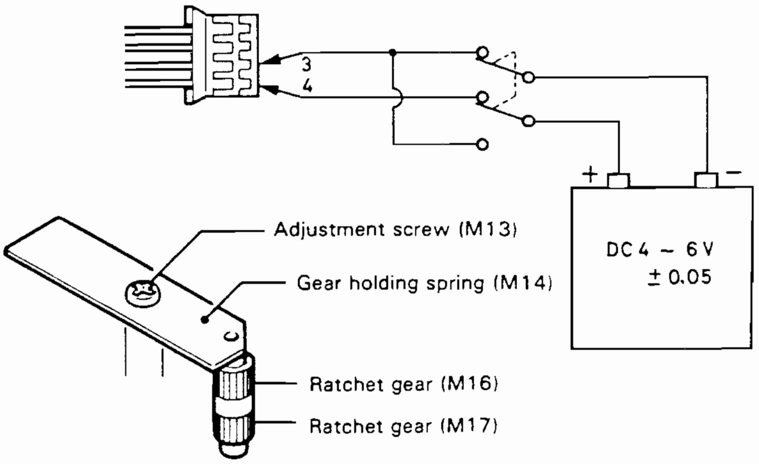

PICK UP RALE
X
X= 0~0.1mm
CORNERING POINT
TOP OF TOOTH
④
③
②
①
②
③
4
3
2
1
Align at the arrows.
The mark can be seen from the hole. Align the short tooth of the pinion with the first interval between teeth of the rack.
Align with the fourth interval between teeth.

HOW TO REASSEMBLE THE COMPACT-DISC PLAYER

(d) Ratchet gear holding spring (M14) tension adjustment A loading ratchet gear is provided in order to protect the sled motor's power train.

- Have ready a DC power supply.

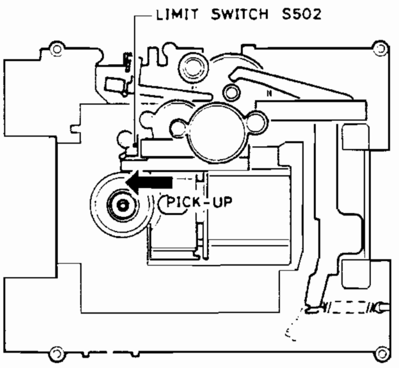
(1) Apply 4.6V; cut the power when the disc tray comes out half way.
(2) Loosen the adjustment screw to the extent that there is no tension at the spring plate.
(3) Apply 5V; the ratchet gear will close to the point where there is no ratcheting.
(4) Apply 4.6V; check to be sure that there is no ratcheting.
(5) Apply 5.3V; check to be sure that the ratchet gear moves three times or more. Secure the adjustment screw by using Cemedine #575 or a similar bond.
(6) Repeat steps (3) to (5) one or two times.

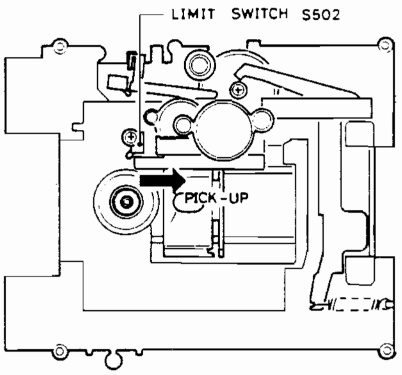


B. RESETTING THE PICK-UP TO THE HOME POSITION

(a) The limit switch is switched ON by the projection of the rack gear secured to the returned pick-up, after which the sled motor continues to operate (by the circuit) for approximately 20 ~ 30 milliseconds; there is then again a reverse operation, and movement to the position at which the switch is switched OFF.

(b) Rotation continues for about 20 ~ 30 milliseconds after the switch is switched OFF, and then the pick-up stop at home position.





COMPACT-DISC PLAYER ADJUSTMENTS

A. PREPARATIONS FOR ADJUSTMENTS

(a) Measuring instruments, tools and filter
(1) Test disc: YEDS18 (Sony)
(2) Oscilloscope: SS5711 (100MHz or dual phenomenon)
or, Memoryscope: DSS6521 (Storagescope)
(3) Digital voltmeter (Input impedance 1MΩ or more)
(4) Oscillator (400Hz, 300mV RMS)
(5) Frequency counter (5MHz; or more)
(6) Screwdrivers (non-metallic) for adjustments.
(7) Filter

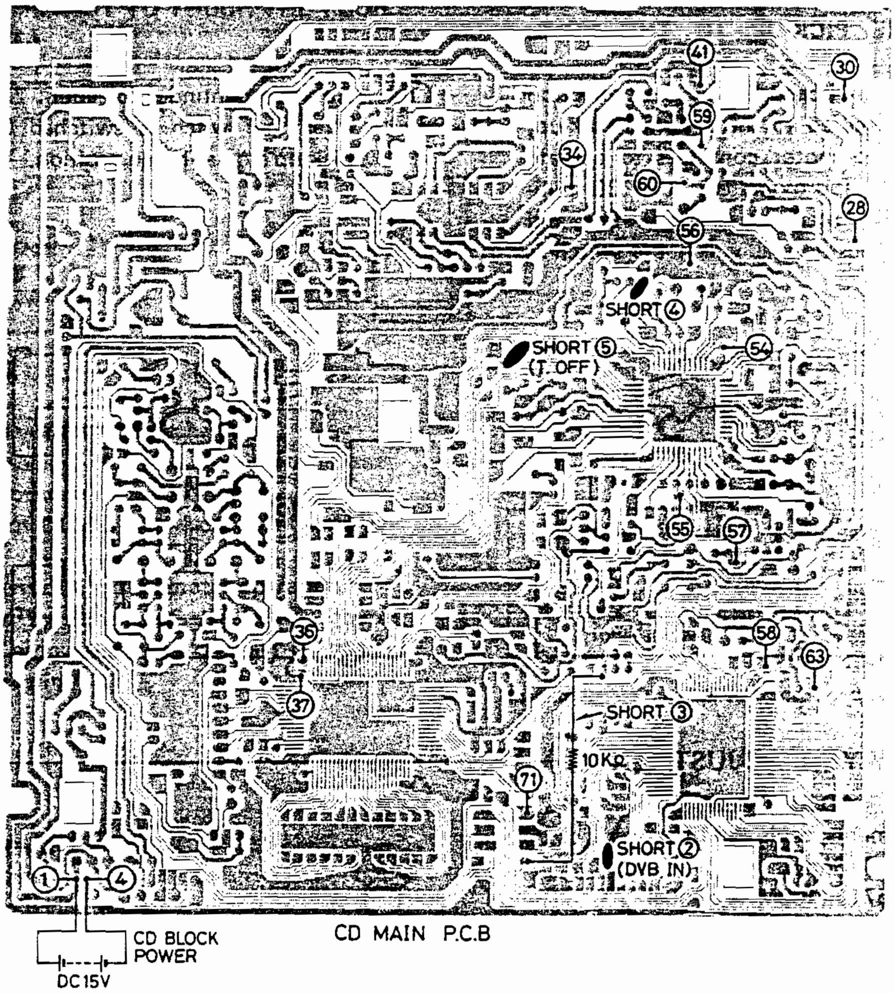
Notes: a. The adjustments can be made using the equipment produced by other manufacturers provided that the performance of that equipment corresponds to that of the above-listed models.
b. Use a 10:1 probe for observing signals on the oscilloscope and storage scope.

COMPACT-DISC PLAYER ADJUSTMENTS

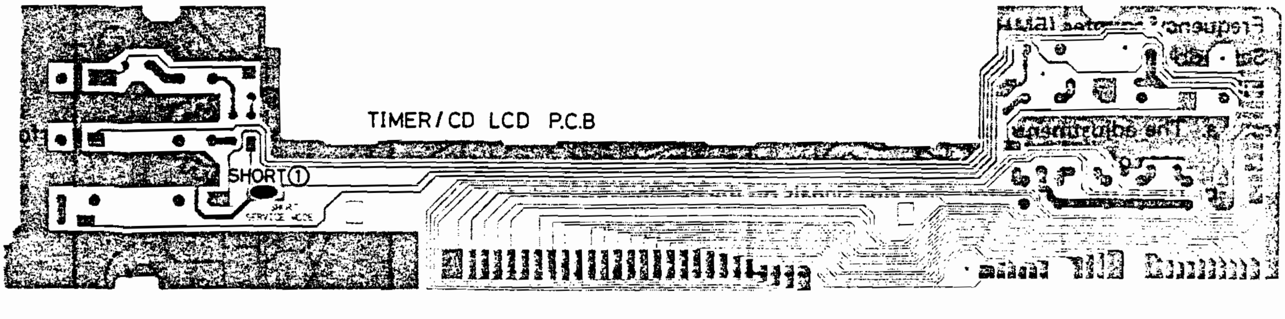
- Short-circuiting of printed-circuit board patterns
  Test programming for servicing is not included in the IC501 programming. Circuits can be placed in the operational condition without going through the IC501 microcomputer, however, by using solder to short circuit the following points.

Pattern to be short-circuited	Description
SHORT 1	Set the IC501 to service mode.
SHORT 2	Set the forbid the Dubbing action.
SHORT 3	Set the CD block power to ON. (Shorted by 10k ohm resistor)
SHORT 4	Set the tracking servo to OFF.
SHORT 5	Set the tracking off signal to muting.

- Pattern test-point location diagram
  After adjusting, cancel the shorted at the short point on the PCB.

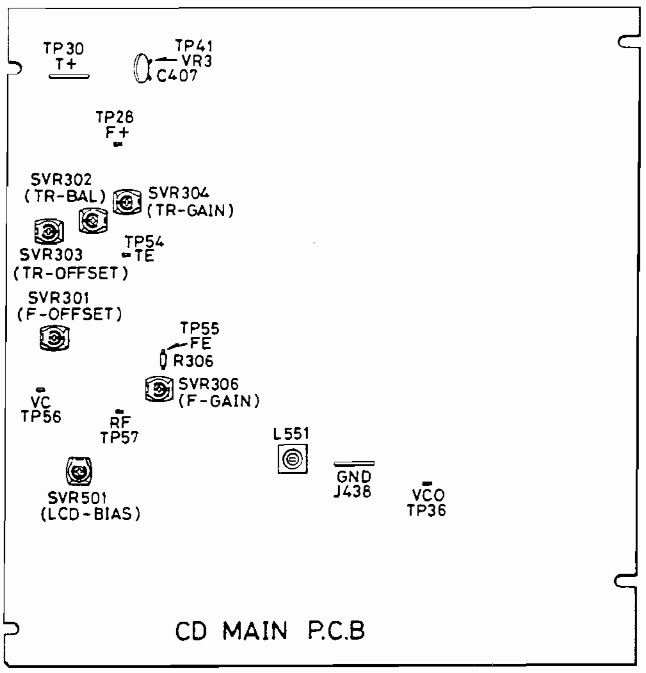

㊶
㉚
㊾
㉞
㊿
㉘
(56)
SHORT④
SHORT⑤
(T. OFF)
(54)
(55)
(57)
㊱
(58)
(63)
㊲
SHORT③
10KΩ
(71)
SHORT②
(DVB IN)
①
④
CD BLOCK
POWER
DC15V

CD MAIN P.C.B


TIMER/CD LCD P.C.B
SHORT①
SERVICE MODE

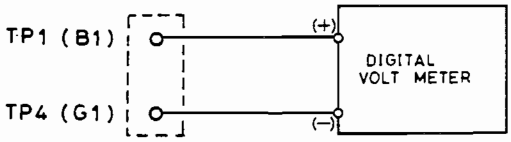
COMPACT-DISC PLAYER ADJUSTMENTS

B. PARTS LOCATION


TP30
T+
TP41
VR3
C407
TP28
F+
SVR302
(TR-BAL)
SVR304
(TR-GAIN)
SVR303
(TR-OFFSET)
TP54
TE
SVR301
(F-OFFSET)
TP55
FE
R306
SVR306
(F-GAIN)
VC
TP56
RF
TP57
L551
GND
J438
VCO
TP36
SVR501
(LCD-BIAS)
CD MAIN P.C.B

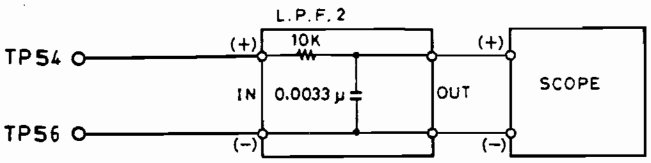
C. ADJUSTMENTS

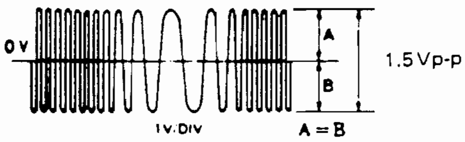
Add the DC 15V to TP1 & TP4 for adjust by CD block unit.


TP1 (B1)
TP4 (G1)
(+)
(–)
DIGITAL
VOLT METER

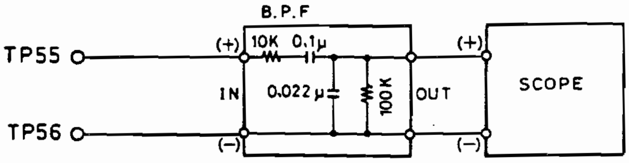
(a) PLL VCO free-run adjustment
(1) Short-circuit points 1 ~ 3 on the printed-circuit board.
(2) Connect a frequency counter to TP36 (PLCK) and TP37 (GND.)
(3) Switch ON the DC power.
(4) Close the disc tray.
(5) Adjust L551 so that the reading of the frequency counter is 4.30 MHz ± 0.01 MHz.

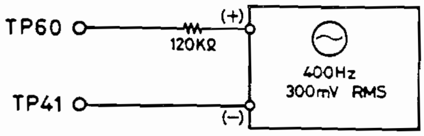
(b) Tracking balance adjustment
(1) Add the printed-circuit board short-circuit points 4.
(2) Connect an oscilloscope to TP54 (TE) and TP56 (VC2.5V).
(3) Switch ON the DC power.
(4) Load the test disc.
(5) Adjust SVR302 so that the oscilloscope's waveform is symmetrical, as shown in the illustration.
(6) Cancel the short-circuit of only short-circuit point 4 on the printed-circuit board.
(7) The tracking servo will be switched ON, and the disc will change to the PLAY mode.
(8) At this adjust time, signal occures at 10 sec. If signal was stop, after ON for once DC power was OFF.


L.P.F. 2
TP54
TP56
(+)
(–)
10K
IN
0.0033 μ
OUT
(+)
(–)
SCOPE

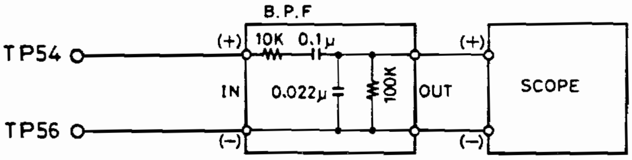

0 V
A
B
1.5Vp-p
1V.DIV
A = B

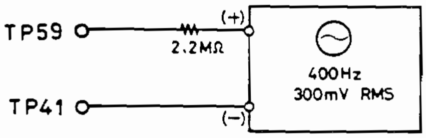
(c) Focus gain adjustment
(1) Check short-circuit points 1 ~ 3 on the printed-circuit board.
(2) Switch ON the DC power.
(3) Load the test disc.
(4) Connect, as shown in the figure, a 120k ohm resistor to the low-frequency oscillator (400 Hz, 300 mV, RMS), and then connect to TP60 (FS) and TP41 (VR1).
(5) Connect an oscilloscope to TP55 (FE) and TP56 (VC2.5V).
(6) Adjust SVR306 so that the oscilloscope's waveform is 300 mVp-p.


B.P.F
TP55
TP56
(+)
(−)
10K
0.1μ
IN
0.022μ
100K
OUT
(+)
(−)
SCOPE

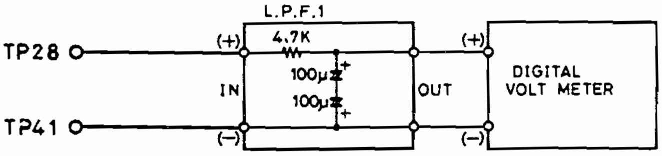

TP60
TP41
120KΩ
(+)
(−)
400Hz
300mV RMS

(d) Tracking gain adjustment
(1) Check short-circuit points 1 ~ 3 on the printed-circuit board.
(2) Switch ON the DC power.
(3) Load the test disc.
(4) Connect, as shown in the illustration, a resistance (2.2 M ohm) to a low-frequency oscillator, and connect to TP59 (TS) and TP41 (VR3).
(5) Connect an oscilloscope to TP54 (TE) and TP56 (VC2.5V).
(6) Adjust SVR304 so that the oscilloscope's waveform is 300mVp-p.

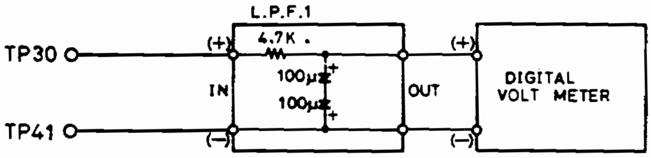

B.P.F
TP54
TP56
(+)
(−)
10K
0.1μ
IN
0.022μ
100K
OUT
(+)
(−)
SCOPE


TP59
TP41
2.2MΩ
(+)
(−)
400Hz
300mV RMS

(e) Focus offset adjustment
(1) Check short-circuit points 1 ~ 3 on the printed-circuit board.
(2) Switch ON the DC power.
(3) Load the test disc.
(4) Connect a digital voltmeter. Record the DC offset voltage read-out at this time.
(5) Remove the test disc from the unit.
(6) Add the printed-circuit board short-circuit point 5.
(7) Adjust SVR301 so that the digital voltmeter voltage reading is the same as the value (±10mV) measured at step (3) above.


L.P.F.1
TP28
TP41
(+)
(−)
4.7K
IN
100μ
100μ
OUT
(+)
(−)
DIGITAL VOLT METER

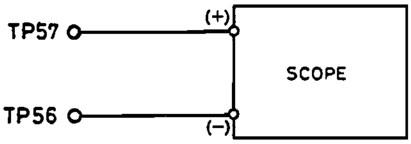
(f) Tracking offset adjustment
(1) Continue from step (7) above of "Focus offset adjustment".
(2) Connect a digital voltmeter.
(3) Adjust SVR303 so that the digital voltmeter reading becomes 0 mV ± 10 mV.
(4) Cancel the short-circuiting of only short-circuit point 5.

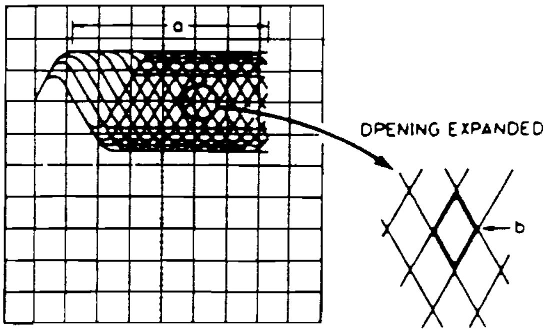

L.P.F.1
TP30
TP41
(+)
(−)
4.7K
IN
100μ
100μ
OUT
(+)
(−)
DIGITAL VOLT METER

COMPACT-DISC PLAYER ADJUSTMENTS

(g) Checking the eye patterm

The adjustments (a) - (f) complete the adjustments of the compact-disc player. Next, check the eye patterm waveform.





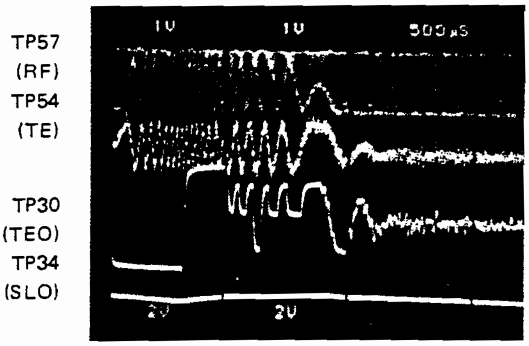
Adjusting table

Adjustment item	Measuring instrument	Test disc	Short-circuit location	Input Point	Output Point	Adjustment location	Adjustment value
PLL-VCO free-run	Frequency Counter	–	SHORT 1 ≀ SHORT 3	–	TP36 (PLCK) TP37 (GND)	L551	4.30MHz ± 0.01MHz
Tracking balance	Oscilloscope Low-passfilter 2	YEDS18	SHORT 1 ≀ SHORT 4	–	TP54 (TE) TP56 (VC2.5V)	SVR302	Waveform symmetry A = B 1.5Vp-p
Focus gain	Memory-scope Oscilloscope Oscillator and Bandpass filter	TEDS18	SHORT 1 ≀ SHORT 3	TP60 (FS) TP41 (VR3)	TP55 (FE) TP56 (VC2.5V)	SVR306	300mVp-p
Tracking gain				TP59 (TS) TP41 (VR3)	TP54 (TE) TP56 (VC2.5V)	SVR304	300mVp-p
Focus offset	Digital voltmeter Low-pass filter 1	YEDS18	SHORT 1 ≀ SHORT 3 SHORT 5	–	TP28 (F+) TP41 (VR3)	SVR301	Voltage during PLAY and voltage during STOP = same voltage value (± 10mV)
Tracking offset				–	TP30 (TO) TP41 (VR3)	SVR303	0mV ± 10mV
Checking the eye-pattern	Oscilloscope	YEDS18	SHORT 1 ≀ SHORT 3	–	TP57 (RF) TP56 (VC2.5V)	–	Check be sure that the "eye" pattern is at the center of the waveform and that the diamond shape is clearly defined

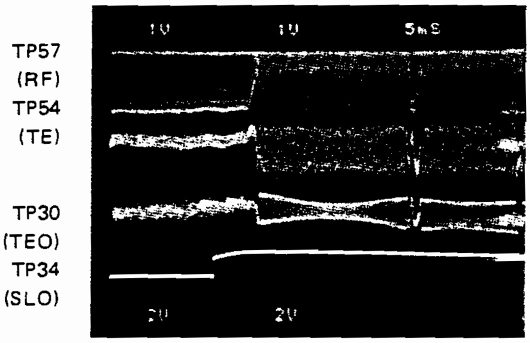
NORMAL WAVE FOAM OF TEST POINT

TP30 (TEO) : Pick-up tracking coil drive voltage
TP34 (SLO) : Sled motor drive voltage

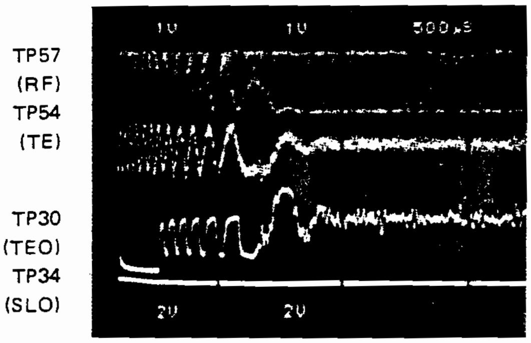
MODE : BACK SEARCH
GND : TP53 (VC 2.5V)
V1, V3 : 1V/div V2, V4 : 2V/div H : 500 µsec/div



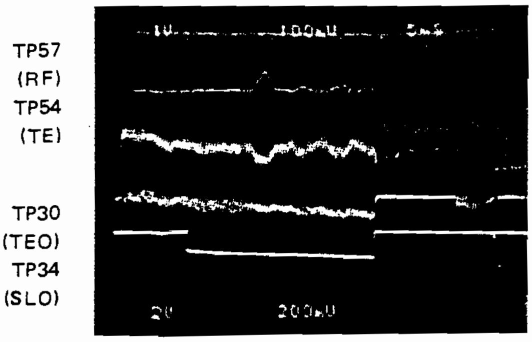
ODE : BACK SKIP
GND : TP53 (VC 2.5V)
V1, V3 : 1V/div V2, V4 : 2V/div H : 5m sec/div



ODE : FWD SEARCH
GND : TP53 (VC 2.5V)
V1, V3 : 1V/div V2, V4 : 2V/div H : 500 µsec/div

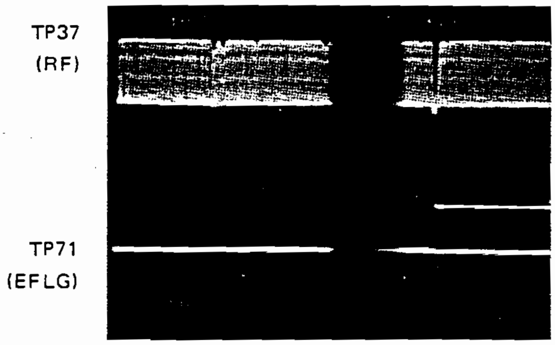


DE : FWD SKIP
ND : TP53 (VC 2.5V)
1, V3 : 1V/div V2, V4 : 2V/div H : 5m sec/div

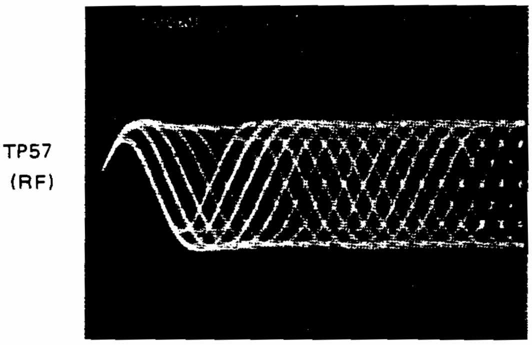


TP58 (EFLG) : Error flag.
TP61 (PLCK) : PLL Clock pulse check terminal

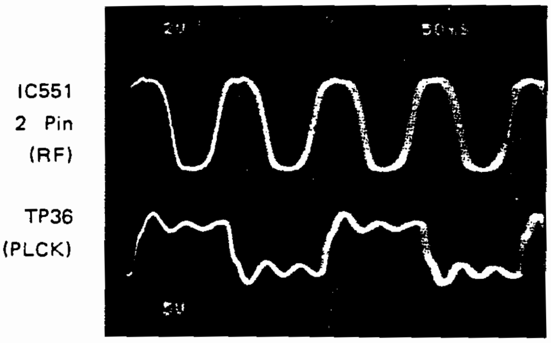
MODE : PLAY (ERROR DISC)
GND : TP37 (GND)
V1 : 1V/div V2 : 5V/div H : 5m sec/div



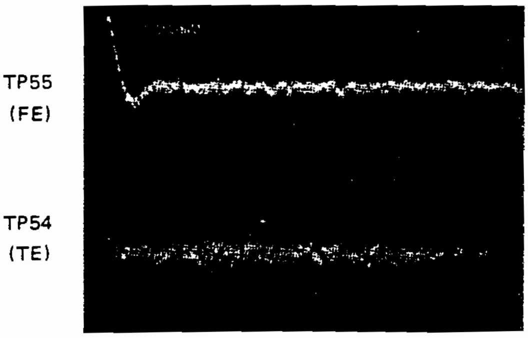
MODE : PLAY
GND : TP56 (VC 2.5V)
V : 500mV/div H : 500m sec/div



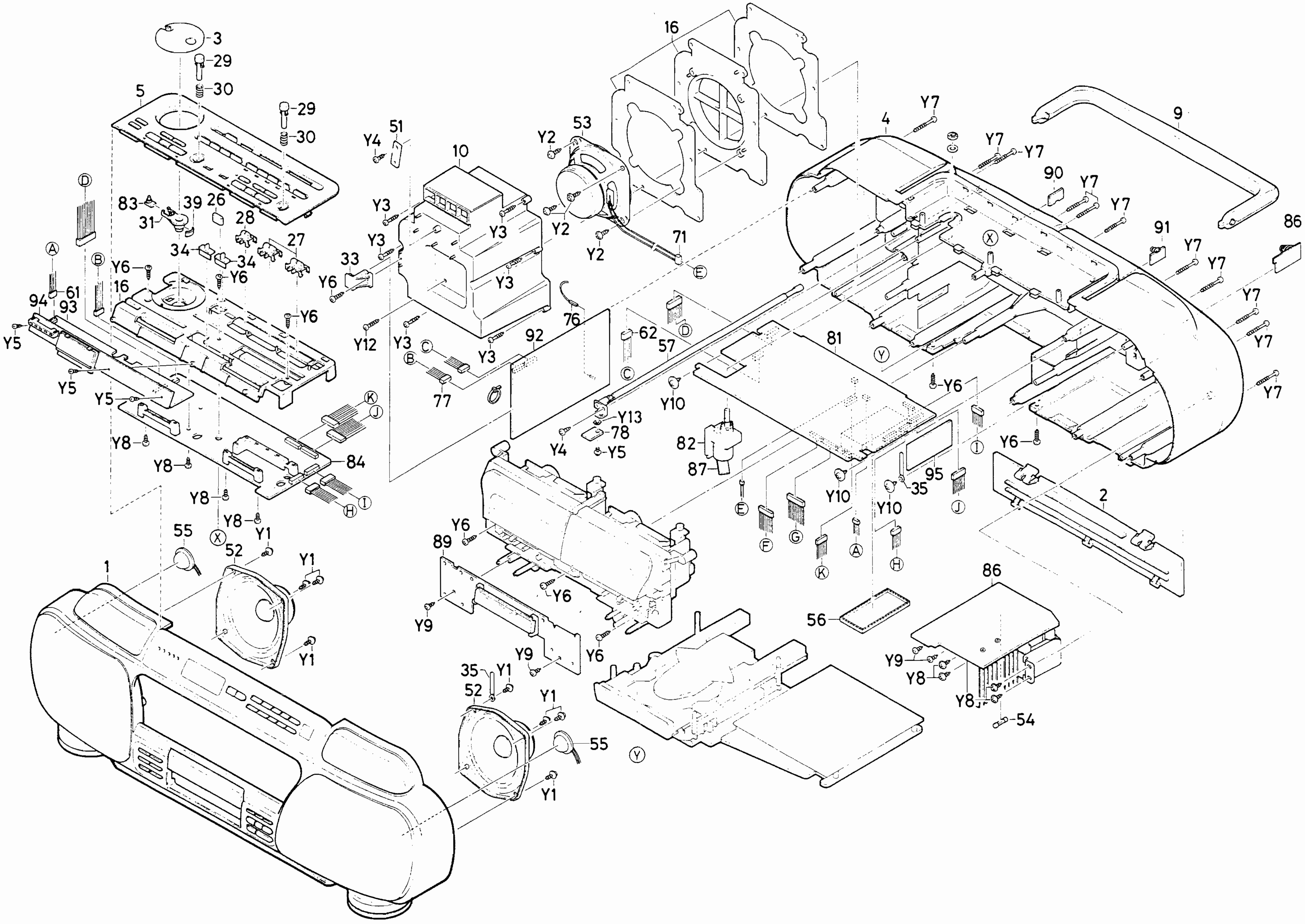
MODE : PLAY
GND : TP37 (GND)
V1 : 2V/div V2 : 5V/div H: 50n sec/div



MODE : PAUSE
GND : TP56 (VC 2.5V)
V1 : 500mV/div V2 : 1V/div H : 1msec/div



EXPLODED VIEW (CABINET & CHASSIS 1/2)


3
29
30
5
29
30
51
Y4
10
Y2
53
16
Y7
4
9
Y7
Y7
90
Y7
Y7
86
Ⓓ
83
39
26
31
28
27
Ⓐ
Ⓑ
Y6
34
34
Y6
33
Y3
Y3
Y3
Y3
Y2
Y2
71
Ⓔ
Ⓧ
91
Y7
Y7
Y7
Y7
Y7
94
61
93
16
Y6
Y6
Y5
76
62
57
Ⓓ
81
Ⓨ
Y12
Y3
Y3
92
Ⓒ
Ⓑ
Ⓒ
77
Y5
Y5
Ⓚ
Ⓙ
Y13
78
Y4
Y5
Y10
82
87
Y6
Y6
Ⓘ
Y8
Y8
84
Y8
Y8
Y1
Ⓧ
Ⓗ
Ⓘ
55
52
1
Y1
Y1
35
Y10
Y10
95
Ⓙ
Ⓔ
Ⓕ
Ⓖ
Ⓚ
Ⓐ
Ⓗ
2
Y6
89
Y6
Y9
Y6
Y9
Y6
86
56
35
Y1
52
Y1
55
Y1
Ⓨ
Y9
Y8
Y8
54

PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 218 6213	INNER CARTON
	614 216 2576	PAD, UPPER
	614 216 2583	PAD, BOTTOM
	614 205 6653	POLYE COVER 950X500, SET
	614 191 3681	LABEL
	614 218 6220	INSTRUCTION MANUAL
	⚠ 614 022 2128	POWER CORD
or	⚠ 614 022 2678	LEAD CORD

CABINET

Ref. No.	Part No.	Description
1	614 218 5865	ASSY, CABINET
2	614 218 7067	ASSY, LID, BATTERY
3	614 213 2999	KNOB, ROTARY, VOLUME
4	614 218 5872	ASSY, CABINET, REAR
5	614 218 5926	ASSY, PANEL, TOP
6	614 218 8293	ASSY, LID, CASSETTE, LEFT
7	614 217 2230	ASSY, LID, CASSETTE, RIGHT
8	614 213 2708	ASSY, CABINET, BOTTOM, CD
9	614 217 2254	ASSY, HANDLE
10	614 213 2739	ASSY, CASE, BASS
11	614 069 0378	GEAR ASSY, TOP LID
12	614 213 3323	SPRING, WIRE, TOP LID, RIGHT
13	614 213 3200	MOUNT-M, TOP LID
14	614 213 3231	JOINT, TOP LID
15	614 213 3248	JOINT, TOP LID
16	614 215 5363	ASSY, MOUNT-M, BASS
17	614 217 5101	SPRING, WIRE, TOP LID, LEFT

CHASSIS

Ref. No.	Part No.	Description
21	614 213 3934	ASSY, TABLE, LOADING, CD TRAY
22	614 213 2968	PANEL, FRONT, CD TRAY
23	614 199 0521	CUSHION, CD DUMPER
24	614 204 9266	CUSHION, CD DUMPER
25	614 213 3194	MOUNT-M, TOP CHASSIS
26	614 213 3057	BUTTON, MAIN POWER
27	614 213 3002	KNOB, SLIDE, BASS & TONE
28	614 213 3019	KNOB, SLIDE, MODE
29	614 213 3064	BUTTON, TOP LID
30	614 213 3309	SPRING, COMP, TOP LID
31	614 213 3156	MOUNT-E, VOL. LED
32	614 213 4009	MOUNT-M, C-MECHA
33	614 214 4022	MOUNT-M, TUN PCB
34	614 216 0756	SLIDE KNOB, TIMER STANDBY & REVERSE MODE
35	614 129 9136	LUG, LEAD RETAINER
36	614 134 8865	GEAR, CD TRAY
37	614 134 8858	GEAR, CD TRAY
38	412 027 1906	SPECIAL WASHER, CD TRAY
39	614 217 9635	CUSHION, 8X12X3T, LEAD FIX
40	412 021 6204	SPECIAL WASHER, 3.2X8X1T, L-MECHA

FIXING PARTS

Ref. No.	Part No.	Description
Y1	411 020 9902	SCR S-TPG BRZ + FLG 3X8, MAIN SP
Y2	411 020 9506	SCR S-TPG BRZ + FLG 3X16, BASS SP.
Y3	411 021 4906	SCR S-TPG BIN 3X20, BASS CASE
Y4	411 021 3503	SCR S-TPG BIN 3X10, ROD ANT.
Y5	411 024 3708	SCR S-TPG PAN + FLG 2X6, ROD ANT.
Y6	411 021 4302	SCR S-TPG BIN 3X14
Y7	411 026 5205	SCR S-TPG PAN 3X35, CABI BACK
Y8	411 020 8905	SCR S-TPG BRZ + FLG 3X10, PT & SW PCB
Y9	411 021 3503	SCR S-TPG BIN 3X10
Y10	412 005 2307	SPECIAL SCREW, AMP & DC-DC CONV. PCB
Y11	412 003 1708	SPECIAL SCREW, CD MECHA BOTTOM
Y12	411 020 9704	SCR S-TPG BRZ + FLG 3X20, DUCT CASE
Y13	411 085 0500	WASHER OUT TW 2X4.8X0.32T, ROD ANT.

ELECTRICAL PARTS

Ref. No.	Part No.	Description
51	614 216 4709	PCB, PT LEAD
or	614 216 4716	PCB
52	614 213 3330	SPEAKER
53	614 213 3354	SPEAKER
or	614 213 3361	SPEAKER
54	⚠ 423 007 5500	FUSE 125V 6.3A
55	419 002 0206	PIEZO BUZZER 7MB-20-5R5
or	419 002 0305	PIEZO BUZZER 7SB-20-5R5
56	614 117 2699	SHIELD PLATE
57	614 206 3507	ANTENNA, ROD ANTENNA
61	614 213 3583	SOCKET, 4P, PCB (81 TO 93)
62	614 213 3590	SOCKET, 5P, PCB (81 TO 94)
63	614 213 3569	SOCKET, 10P, PCB (81 TO 84)
64	614 213 3576	SOCKET, 7P, PCB (81 TO 84)
65	614 213 3613	SOCKET, 7P, PCB (81 TO 84)
66	614 215 9088	SOCKET, 9P, PCB (81 TO 84)
67	614 215 9095	SOCKET, 6P, PCB (81 TO 84)
68	614 213 3514	SOCKET, 9P, PCB (81)-A MECHA
69	614 213 3521	SOCKET, 11P, PCB (81)-B MECHA
70	614 213 3545	SOCKET, 3P, PCB (85)-FRONT SP
71	614 213 3552	SOCKET, 2P, PCB (81)-WOOFER SP
72	614 213 3491	SOCKET, 4P, A MECHA MOTOR
73	614 213 3484	SOCKET, 3P, P HEAD
74	614 213 3477	SOCKET, 5P, R/P HEAD
75	614 213 3507	SOCKET, 4P, B MECHA MOTOR
76	614 019 7631	SOCKET, ROD ANT
77	614 218 6183	SOCKET, TU-SW
78	614 220 4214	PCB, ANT.

PARTS LIST

MAIN AMP P.C.BOARD ASSY

Ref. No.	Part No.	Description
81	614 213 2579	ASSY, PCB, MAIN AMP.
	614 117 2675	SHIELD PLATE
	614 116 7787	SHIELD PLATE
	614 130 0238	LUG
	614 020 2649	SOCKET, SURROUND
	614 213 3460	SOCKET, LINE IN
	614 199 1986	SOCKET, HEADPHONE
	614 035 4973	SOCKET, 8P
	614 035 4980	SOCKET, 9P, CD
	614 020 6616	SOCKET, 9P, POWER SUPPLY
	614 020 6623	SOCKET, 10P
	614 035 4911	SOCKET, 2P, VR, BIAS & SHIELD
	614 035 4942	SOCKET, 5P, VR
	614 017 2096	PLUG, 2P, WOOFER SP
	614 017 2621	PLUG, 11P, B MECHA
	614 017 2560	PLUG, 5P, TU & R/P HEAD
	614 017 2546	PLUG, 3P, P HEAD
	614 017 2553	PLUG, 4P, MOTOR, A MECHA
	614 017 2119	PLUG, 4P, MOTOR, B MECHA
	614 017 2577	PLUG, 6P, TAPE MECHA SW PCB
	614 017 2584	PLUG, 7P, TAPE MECHA SW PCB
	614 017 2607	PLUG, 9P, TAPE MECHA SW PCB
	614 017 2614	PLUG, 10P, TAPE MECHA SW PCB
	614 017 2553	PLUG, 4P, TUNER LCD CONT. PCB
ICP	⚠ 614 002 3299	IC-PROTECTOR ICP-F25
L601	614 028 6793	FILTER, 27UH
L651	614 028 6748	FILTER, 10UH
L901	614 219 7202	TRANS, OSC
L902	614 028 4133	FILTER, 10UH
L903	614 028 6793	FILTER, 27UH
X651	614 200 0311	CERAMIC RESONATOR, 2MHZ
or	614 215 9262	RESONATOR
X901	614 035 1316	CERAMIC RESONATOR, 400KHZ
S607	614 019 1813	SWITCH, B.C & LOCAL/DX
S671	614 012 4316	SWITCH, BEAT CANCEL
SVR651	614 003 5940	SEMI V.R, 2K
or	614 006 8207	SEMI V.R, A MECHA "NORMAL"
SVR652	614 003 5940	SEMI V.R, 2K
or	614 006 8207	SEMI V.R, A MECHA "HIGH"
SVR653	614 003 5940	SEMI V.R, 2K
or	614 006 8207	SEMI V.R, B MECHA "NORMAL"
SVR654	614 003 5940	SEMI V.R, 2K
or	614 006 8207	SEMI V.R, B MECHA "HIGH"
RA651	614 209 8561	RESISTOR 15X10K
or	614 217 1400	RESISTOR
RA652	614 209 3641	RESISTOR 6X10K
or	614 217 1318	RESISTOR
RA653	614 209 3580	RESISTOR 3X10K
or	614 217 1288	RESISTOR
IC651	410 076 4602	IC LC66506B-4213
IC901	409 002 4700	IC BA3416BL
IC902	409 115 6806	IC BA3312N
IC903	409 189 3404	IC BA7755A
IC904	409 020 8704	IC LC4066B
IC905	409 020 8704	IC LC4066B
IC906	409 185 7000	IC LC6527C-4095
IC907	409 111 9405	IC BA6209N
or	409 114 4803	IC LB1641
IC910	409 026 8500	IC L78M05
Q601	405 019 3705	TR 2SC536-G-AUD-SPA
Q602	405 019 3705	TR 2SC536-G-AUD-SPA
Q603	405 019 3705	TR 2SC536-G-AUD-SPA
Q604	405 019 3705	TR 2SC536-G-AUD-SPA
Q605	405 035 7107	TR 2SD1913-R
or	405 035 7206	TR 2SD1913-S
Q651	405 003 7702	TR 2SA1346
Q652	405 017 9709	TR 2SC3330-U
Q653	405 018 2600	TR 2SC3400
Q654	405 007 6701	TR 2SB598-F-NP
Q655	405 007 6701	TR 2SB598-F-NP
Q656	405 003 5401	TR 2SA1317-U
Q657	⚠ 405 008 2405	TR 2SB698-F
Q658	405 003 5401	TR 2SA1317-U
Q659	⚠ 405 008 2405	TR 2SB698-F
Q660	405 007 6701	TR 2SB598-F-NP
Q661	405 007 6701	TR 2SB598-F-NP
Q662	405 003 7702	TR 2SA1346
Q663	405 018 2600	TR 2SC3400
Q664	405 018 2600	TR 2SC3400
Q665	405 018 2600	TR 2SC3400
Q701	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q702	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
or	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 095 3408	TR 2SJ105-BL
Q703	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
or	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 095 3408	TR 2SJ105-BL
Q704	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q705	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q706	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q707	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q708	405 021 0600	TR 2SD1012-G-SPA
Q711	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q712	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q713	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
or	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 095 3408	TR 2SJ105-BL
Q801	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q802	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
or	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 095 3408	TR 2SJ105-BL
Q803	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
or	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 095 3408	TR 2SJ105-BL
Q804	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q805	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q806	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q807	405 088 8205	TR 2SC1571-F2-NP
or	405 010 9706	TR 2SC1571-G-NP
Q808	405 021 0600	TR 2SD1012-G-SPA
Q811	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q812	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q813	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
or	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 095 3408	TR 2SJ105-BL
Q901	405 013 7006	TR 2SC2274-F
Q902	405 004 4502	TR 2SA608-F-NP
Q903	405 001 7704	TR 2SA1016-F
Q904	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q905	405 004 4601	TR 2SA608-F-SPA
Q906	405 004 4502	TR 2SA608-F-NP

PARTS LIST

Ref. No.	Part No.	Description
Q907	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q911	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q912	405 007 6701	TR 2SB598-F-NP
Q913	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q914	405 035 7107	TR 2SD1913-R
or	405 035 7206	TR 2SD1913-S
Q915	405 009 5207	TR 2SB927-S
or	405 009 5306	TR 2SB927-T
Q916	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
D601	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D602	407 053 3703	ZENER DIODE MTZ15B
D681	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D682	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D683	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D684	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D685	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D686	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D903	407 053 6407	ZENER DIODE MTZ5.1C
D905	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D906	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D907	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D908	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D909	407 053 2607	ZENER DIODE MTZ10B
D914	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D915	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D916	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D917	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
C925	403 062 0801	POLYESTER 0.047U K 50V
C928	403 081 1209	POLYPRO 0.018U J 100V
R946	⚠ 402 041 4601	FUSIBLE RES 10 J- 1/4W
R978	402 032 9707	FUSIBLE RES 2.2 J- 1/4W

VOLUME P.C.BOARD ASSY

Ref. No.	Part No.	Description
82	614 213 2586	ASSY, PCB, VOLUME
	614 035 4942	SOCKET, 5P
VR701	614 210 4835	VR, ROTARY 50KB (VR701,801)

VOLUME LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
83	614 213 2593	ASSY, PCB, VOLUME LED
	614 213 3170	MOUNT-E
D904	407 115 6000	LED SLP-135B-51-A
or	407 115 6109	LED SLP-135B-51-B

TAPE MECHANISM SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
84	614 218 5681	ASSY, PCB, TAPE MECHANISM SWITCH
	614 213 3132	MOUNT-E
	614 213 3149	MOUNT-E
	614 215 9101	SOCKET, LED
	614 215 9118	SOCKET, 6P
	614 215 9125	SOCKET, 5P
	614 017 2539	PLUG, 2P, TU
	614 017 3888	PLUG, 9P, AMP
	614 017 3864	PLUG, 7P, AMP
	614 017 3857	PLUG, 6P, AMP
	614 017 2614	PLUG, 10P, AMP
	614 208 6070	SWITCH, IR
	614 012 4316	SWITCH, 9K/10K STEP SELECT
S2	614 213 3644	SWITCH, SLIDE, FM MODE
S601	614 024 2393	SWITCH, TONE
S602	614 024 2393	SWITCH, CLASSIC
S603	614 024 2393	SWITCH, POPS
S604	614 024 2393	SWITCH, ROCK
S605	614 024 2393	SWITCH, SURROUND
S606	614 213 3651	SWITCH, PUSH, POWER
S651	614 024 2393	SWITCH, POWER, SUB
S652	614 024 2393	SWITCH, LINE
S653	614 024 2393	SWITCH, TUNER
S654	614 024 2393	SWITCH, TAPE
S655	614 024 2393	SWITCH, CD
S656	614 199 1955	SWITCH, TIMER
S657	614 199 1955	SWITCH, REV MODE
S658	614 024 2393	SWITCH, A-REW
S659	614 024 2393	SWITCH, A-REV
S660	614 024 2393	SWITCH, A-STOP
S661	614 024 2393	SWITCH, FWD
S662	614 024 2393	SWITCH, A-F.F
S663	614 024 2393	SWITCH, B-REW
S664	614 024 2393	SWITCH, B-REV
S665	614 024 2393	SWITCH, B-STOP
S666	614 024 2393	SWITCH, B-FWD
S667	614 024 2393	SWITCH, B-F.F
S668	614 024 2393	SWITCH, B-REC
S669	614 024 2393	SWITCH, DUB
S670	614 024 2393	SWITCH, HI-DUB
VR702	614 205 8206	V.R 50KA, TONE (VR702,802)
VR901	614 215 9231	V.R, SLIDE 50KA, BASS VOL.
IC601	409 052 9304	IC TC9135P
IC602	409 020 7202	IC LC4013B
IC603	409 020 2900	IC LB1433N
Q606	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q607	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q611	405 004 4502	TR 2SA608-F-NP
Q709	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q809	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
D603	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D604	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D605	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D606	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D607	407 124 1409	LED SLP-151B-51-A
or	407 124 1508	LED SLP-151B-51-B
or	407 126 1506	LED SLP-151B-51-C
D608	407 124 1409	LED SLP-151B-51-A
or	407 124 1508	LED SLP-151B-51-B
or	407 126 1506	LED SLP-151B-51-C
D609	407 124 1409	LED SLP-151B-51-A
or	407 124 1508	LED SLP-151B-51-B
or	407 126 1506	LED SLP-151B-51-C
D610	407 124 1409	LED SLP-151B-51-A
or	407 124 1508	LED SLP-151B-51-B

PARTS LIST

Ref. No.	Part No.	Description
D610	407 126 1506	LED SLP-151B-51-C
D611	407 124 1409	LED SLP-151B-51-A
or	407 124 1508	LED SLP-151B-51-B
or	407 126 1506	LED SLP-151B-51-C
D612	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D651	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D652	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D653	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D654	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D655	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D656	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D657	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D658	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D659	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D660	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D661	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D662	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D663	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D664	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D665	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D666	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D667	407 126 1605	LED SLP-276B-51-A
or	407 126 1704	LED SLP-276B-51-B
or	407 126 1803	LED SLP-276B-51-C
D668	407 126 1605	LED SLP-276B-51-A
or	407 126 1704	LED SLP-276B-51-B
or	407 126 1803	LED SLP-276B-51-C
D669	407 126 1605	LED SLP-276B-51-A
or	407 126 1704	LED SLP-276B-51-B
or	407 126 1803	LED SLP-276B-51-C
D670	407 126 1605	LED SLP-276B-51-A
or	407 126 1704	LED SLP-276B-51-B
or	407 126 1803	LED SLP-276B-51-C
D671	407 110 5008	LED SLP-177B-51-A
or	407 110 5107	LED SLP-177B-51-B
or	407 126 1407	LED SLP-177B-51-C
R977	⚠ 402 051 7708	FUSIBLE RES 47 J- 1/4W

POWER SUPPLY P.C.BOARD ASSY

Ref. No.	Part No.	Description
85	614 218 5698	ASSY, PCB, POWER SUPPLY
	⚠ 614 218 6190	POWER TRANS
	⚠ 614 208 4540	FUSE HOLDER
	⚠ 614 215 5479	HEAT SINK
or	⚠ 614 199 9197	HEAT SINK
	411 021 6405	SCR S-TPG BIN 3X8
	614 017 6964	TERMINAL BOARD
	⚠ 614 028 5123	FILTER
	⚠ 614 020 0881	SOCKET, AC
	614 035 5932	SOCKET, 2P
	614 020 8900	SOCKET, 9P
	614 020 8917	SOCKET, 10P
	614 035 4911	SOCKET, 2P

Ref. No.	Part No.	Description
	614 017 2256	PLUG, 3P
	⚠ 614 018 6383	SWITCH, VOLTAGE SELECT
IC909	⚠ 409 178 8106	IC LA4630N
Q910	405 010 9607	TR 2SC1571-F-NP
or	405 010 9706	TR 2SC1571-G-NP
Q917	405 004 4502	TR 2SA608-F-NP
D910	⚠ 407 107 6001	DIODE RL203-BD80
D911	⚠ 407 107 6001	DIODE RL203-BD80
D912	⚠ 407 107 6001	DIODE RL203-BD80
D913	⚠ 407 107 6001	DIODE RL203-BD80
C720	403 060 8908	POLYESTER 0.033U M 50V
C820	403 060 8908	POLYESTER 0.033U M 50V
C952	403 060 8908	POLYESTER 0.033U M 50V
C953	403 060 8908	POLYESTER 0.033U M 50V
C962	403 059 9008	POLYESTER 0.22U M 50V
R728	⚠ 402 032 9707	FUSIBLE RES 2.2 J- 1/4W
R828	⚠ 402 032 9707	FUSIBLE RES 2.2 J- 1/4W
R910	⚠ 402 032 9707	FUSIBLE RES 2.2 J- 1/4W
R911	⚠ 402 032 9707	FUSIBLE RES 2.2 J- 1/4W

BATTERY TERMINAL, MAIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
86	614 213 2623	ASSY, PCB, BATTERY TERMINAL, MAIN
	614 213 4016	TERMINAL

MOTOR VOLUME P.C.BOARD ASSY

Ref. No.	Part No.	Description
87	614 215 8531	ASSY, PCB, MOTOR VOLUME
	614 035 4911	SOCKET, 2P

CD MAIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
88	614 218 2628	ASSY, PCB, CD MAIN
	614 121 5891	HEAT SINK
	411 021 5705	SCR S-TPG BIN 3X6
	614 217 7266	LUG
	614 017 7961	TERMINAL BOARD, TP
	614 017 6964	TERMINAL BOARD, BATTERY & SHIELD
ICP	614 205 2907	IC PROTECTOR ICP-N20
L301	614 199 1962	FILTER
or	614 194 3596	FILTER
L302	614 028 4133	FILTER 10UH
L551	614 194 3619	O.S.C COIL
L981	614 028 6748	FILTER, 10UH
X501	614 215 5523	RESONATOR 4.19MHZ
or	614 215 5561	RESONATOR
X502	614 211 7354	CRYSTAL
X551	614 215 5509	RESONATOR 8.64MHZ
or	614 215 5547	RESONATOR
SVR301	614 003 3120	SEMI V.R, 100K, F.OFFSET
SVR302	614 003 3120	SEMI V.R, 100K, T.BALANCE
SVR303	614 003 3106	SEMI V.R, 30K, T.OFFSET
SVR304	614 003 3106	SEMI V.R, 30K, T.GAIN
SVR306	614 003 3083	SEMI V.R, 10K, F.GAIN
SVR501	614 003 3168	SEMI V.R, 1M, LCD BIAS
CN1	614 017 2577	PLUG, 6P, SW SENSOR
CN2	614 017 2133	PLUG, 6P, PICK ACTUATOR
CN3	614 017 2553	PLUG, 4P, MOTOR
CN4	614 017 2577	PLUG, 6P, SW SENSOR
CN5	614 035 6007	SOCKET, 9P, TO AMP
CN6	614 035 5994	SOCKET, 8P, TO POWER
CN7	614 035 5932	SOCKET, 2P, TO AMP
RA401	614 194 8379	RESISTOR 3.3KX3

PARTS LIST

Ref. No.	Part No.	Description
RA402	614 194 8362	RESISTOR 2.2KX3
IC301	409 124 6507	IC LA9200NM
IC401	409 159 8705	IC LA6531
IC402	409 159 8705	IC LA6531
IC403	409 036 6701	IC M5218L
IC501	410 076 0109	IC CXP5078H-023Q
IC502	409 183 6104	IC PST529J-2
IC551	409 200 0702	IC LC7860KA
IC552	409 123 7109	IC LC3517BS-15
IC980	409 136 7509	IC LC7881-C
IC981	409 189 4203	IC M5278D05
IC982	409 195 1906	IC M5278L56
Q351	405 004 4601	TR 2SA608-F-SPA
Q401	405 021 0204	TR 2SD1012-F-SPA
Q402	405 000 3400	TR DTC114TS
Q403	405 000 3400	TR DTC114TS
Q404	405 000 3400	TR DTC114TS
Q471	405 019 3705	TR 2SC536-G-AUD-SPA
Q472	405 019 3705	TR 2SC536-G-AUD-SPA
Q501	405 085 9007	TR 2SJ105-Y
or	405 085 9106	TR 2SJ105-GR
Q550	405 019 3705	TR 2SC536-G-AUD-SPA
Q551	405 019 3705	TR 2SC536-G-AUD-SPA
Q572	405 004 4601	TR 2SA608-F-SPA
Q781	405 019 3705	TR 2SC536-G-AUD-SPA
Q782	405 019 3705	TR 2SC536-G-AUD-SPA
Q783	405 000 3400	TR DTC114TS
Q784	405 019 3705	TR 2SC536-G-AUD-SPA
Q881	405 019 3705	TR 2SC536-G-AUD-SPA
Q882	405 019 3705	TR 2SC536-G-AUD-SPA
Q883	405 000 3400	TR DTC114TS
Q884	405 019 3705	TR 2SC536-G-AUD-SPA
Q981	405 023 2305	TR 2SD325-E
Q982	405 000 4407	TR DTC124ES
Q983	405 000 1208	TR DTA124ES
Q984	405 019 3705	TR 2SC536-G-AUD-SPA
Q985	405 019 3705	TR 2SC536-G-AUD-SPA
Q986	405 019 3705	TR 2SC536-G-AUD-SPA
Q987	405 019 3705	TR 2SC536-G-AUD-SPA
D301	408 000 0103	VA SVC211SP-B2-AUD
D321	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D402	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D403	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D405	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D407	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D408	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D505	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D506	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D551	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D552	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D553	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D981	407 066 5800	DIODE SB007-03SPA
D982	407 070 8408	ZENER DIODE GZS9.1Y
or	407 053 8807	ZENER DIODE MTZ9.1B
D983	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D984	407 051 6904	ZENER DIODE GZS5.6Y
or	407 053 6704	ZENER DIODE MTZ5.6B
D985	407 051 6904	ZENER DIODE GZS5.6Y
or	407 053 6704	ZENER DIODE MTZ5.6B
D986	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133

Ref. No.	Part No.	Description
C312	403 080 5000	POLYPRO 1000P J 100V
C321	403 067 6204	MT-COMPO 0.15U J 50V
C406	403 067 5603	MT-COMPO 0.1U J 50V
R575	401 057 7903	OXIDE-MT 1 JA 1W

TIMER/CD LCD P.C.BOARD ASSY

Ref. No.	Part No.	Description
89	614 213 1893	ASSY, PCB, TIMER/CD LCD
	614 213 2036	LCD
	614 213 3125	MOUNT-E
	614 112 1581	DOUBLE FACE, LCD FIX 10X90MM
S520	614 018 9056	SWITCH, PLAY/PAUSE
S521	614 018 9056	SWITCH, FF (SKIP/SEARCH)
S522	614 018 9056	SWITCH, FR (SKIP/SEARCH)
S523	614 018 9056	SWITCH, OPEN/CLOSE
S524	614 018 9056	SWITCH, DISPLAY
S530	614 018 9056	SWITCH, HOUR
S531	614 018 9056	SWITCH, MINUTE
S532	614 018 9056	SWITCH, OPERATION
S540	614 018 9056	SWITCH, REPEAT
S541	614 018 9056	SWITCH, MEMORY
S542	614 018 9056	SWITCH, EDIT
S543	614 018 9056	SWITCH, STOP/CLEAR
S550	614 018 9056	SWITCH, MODE/SET
S551	614 018 9056	SWITCH, TIMER SELECT

BATT. 4.5V (+) TERMINAL P.C.BOARD ASSY

Ref. No.	Part No.	Description
90	614 213 2661	ASSY, PCB, BATT. 4.5V (+)
	614 019 7631	SOCKET

BATT. 4.5V (-) TERMINAL P.C.BOARD ASSY

Ref. No.	Part No.	Description
91	614 213 2678	ASSY, PCB, BATT. 4.5V (-)
	614 213 4023	TERMINAL
	614 019 7631	SOCKET

TUNER MAIN P.C.BOARD ASSY

Ref. No.	Part No.	Description
92	614 219 2924	ASSY, PCB, TUNER MAIN
	614 116 9408	SHIELD PLATE, FM RF
	614 035 4980	SOCKET, 9P, TU-CONT.
	614 035 4959	SOCKET, 6P, TU-CONT.
	614 216 5676	SOCKET, 2P, TU-CONT.
	614 217 0717	PLUG, 5P, TU-SW
	614 017 2560	PLUG, 5P, TU-SW
CT1	614 007 6356	TRIMMER 11P
CT50	614 007 6547	TRIMMER 7P
T1	614 030 3681	I.F.T, FM
T50	614 030 4114	I.F.T, FM
L1	614 034 9870	VHF COIL
L2	614 034 6824	VHF COIL
L3	614 035 0036	VHF COIL
L50	614 213 3910	ASSY, BAR ANTENNA
L51	614 033 8898	O.S.C COIL
X50	614 030 5128	I.F FILTER, FM
X51	614 030 5128	I.F FILTER, FM
X52	614 030 4787	CERAMIC FILTER, AM
or	614 210 4668	FILTER
X53	614 208 9644	FILTER, AM
or	614 210 4668	FILTER
SVR51	614 003 3090	SEMI V.R, 20KB, FM SD

PARTS LIST

Ref. No.	Part No.	Description
SVR101	614 003 3083	SEMI V.R, 10KB, FM MPX
TP1	614 017 6964	TERMINAL BOARD
TP6	614 017 6964	TERMINAL BOARD
IC1	409 049 2103	IC TA7358P
IC2	409 195 3108	IC LA1265-AUD
IC101	409 002 1501	IC BA1332L
Q50	405 020 1202	TR 2SC930-D-SPA
Q51	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q101	405 078 4507	TR 2SK83-R2
Q102	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q151	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q152	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q153	405 001 7209	TR 2SA1015-Y
or	405 005 2101	TR 2SA733-Q
Q154	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q155	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q216	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q217	405 001 7209	TR 2SA1015-Y
or	405 005 2101	TR 2SA733-Q
D1	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
D2	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
D3	408 000 0103	VA SVC211SP-B2-AUD
D4	408 000 0103	VA SVC211SP-B2-AUD
D5	408 000 0103	VA SVC211SP-B2-AUD
D6	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
D50	407 000 1905	VARACTOR DI KV1260 (B)
D102	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
D103	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
C77	403 082 2007	POLYPRO 510P J 100V
C109	403 080 5000	POLYPRO 1000P J 100V

TUNER LCD CONTROL P.C.BOARD ASSY

Ref. No.	Part No.	Description
93	614 219 2931	ASSY, PCB, TUNER LCD CONTROL
	614 117 1098	SHIELD PLATE
	614 017 6964	TERMINAL BOARD
	614 035 4959	SOCKET, 6P, TU-CONT
	614 035 4980	SOCKET, 9P, TU-CONT
	614 017 2553	PLUG, 4P, TU-AMP
	614 017 2539	PLUG, 2P, TU-SW
L201	614 028 6748	FILTER 10UH
X201	614 212 3560	RESONATOR 4.5MHZ
CN203	614 035 4928	SOCKET, 3P
IC201	410 082 5501	IC UPD1719G-620-11
Q201	405 012 8400	TR 2SC2021-Q
Q202	405 012 8400	TR 2SC2021-Q
Q203	405 012 5706	TR 2SC1923-O
Q206	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q207	405 001 7209	TR 2SA1015-Y
or	405 005 2101	TR 2SA733-Q
Q212	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q253	405 001 7209	TR 2SA1015-Y
or	405 005 2101	TR 2SA733-Q
D201	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D202	407 005 4505	DIODE DS442X
D203	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D204	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D205	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D206	407 051 7208	ZENER DIODE GZS6.2Y
D207	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D208	407 051 6508	ZENER DIODE GZS4.7Y
D209	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D210	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D250	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D251	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
C201	403 121 8106	NP-ELECT 1U M 50V

TUNER SWITCH P.C.BOARD ASSY

Ref. No.	Part No.	Description
94	614 219 2948	ASSY, PCB, TUNER SW
	614 216 8202	LCD
	614 213 3118	MOUNT-E, LCD
	614 112 1420	DOUBLE FACE, LCD
	614 018 9056	SWITCH, FUNCTION KEY
	614 213 3163	MOUNT-E, LED
	614 017 3857	PLUG, 6P, TU-SW
D612	407 029 0903	LED SLP-177B
D613	407 029 0903	LED SLP-177B
D614	407 029 0903	LED SLP-177B
D615	407 029 0903	LED SLP-177B
D616	407 029 0903	LED SLP-177B

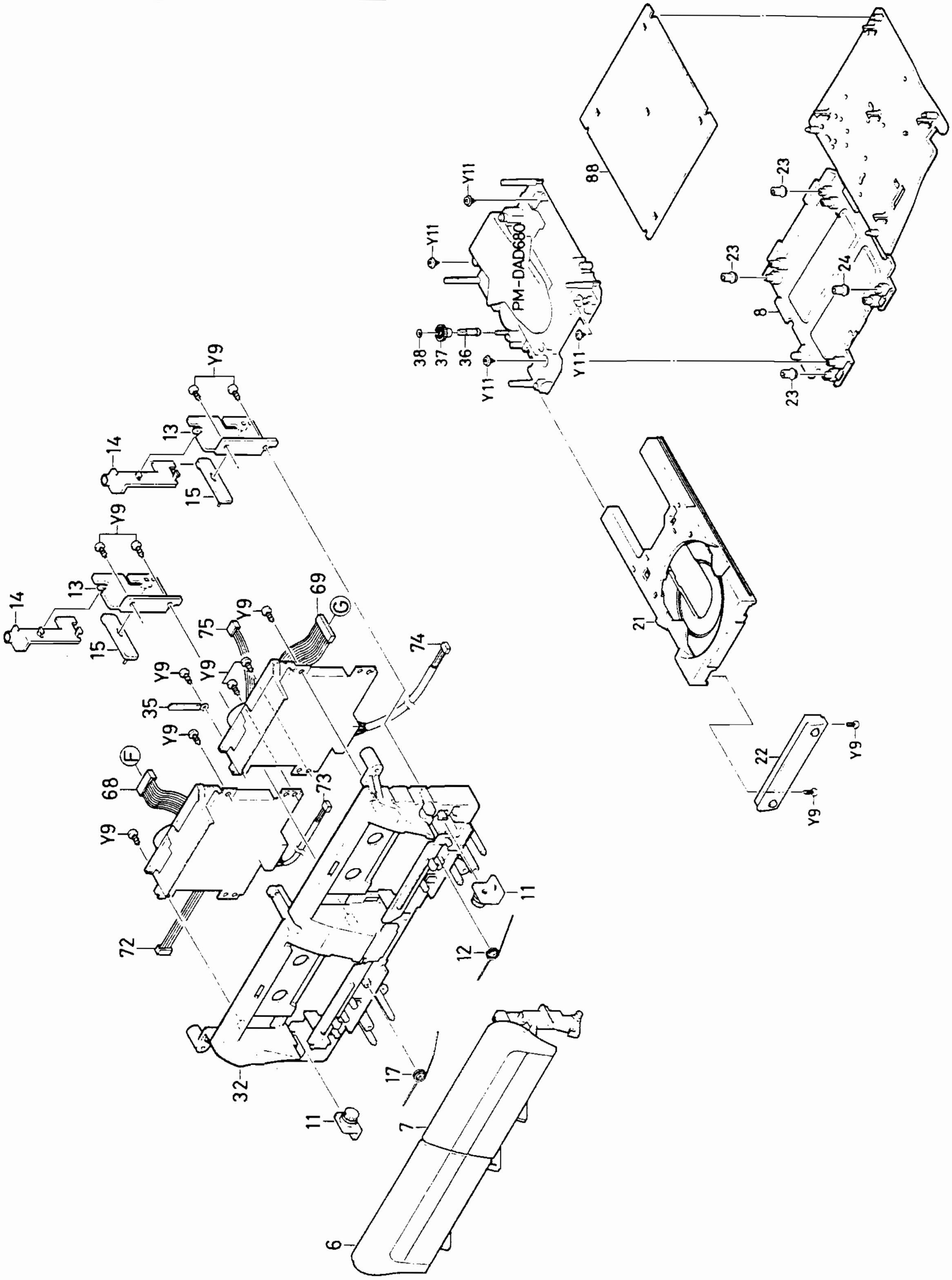
DC-DC CONVERTOR P.C.BOARD ASSY

Ref. No.	Part No.	Description
95	614 219 2955	ASSY, PCB, DC-DC CONV.
	614 116 9408	SHIELD PLATE, PARTS SIDE
	614 117 1098	SHIELD PLATE, PATTERN SIDE
	614 035 4928	SOCKET, 3P
L250	614 028 4379	FILTER 1000UH
L251	614 028 4379	FILTER 1000UH
L252	614 209 1142	O.S.C COIL
Q250	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q251	405 011 8609	TR 2SC1740S-S
or	405 019 3705	TR 2SC536-G-AUD-SPA
Q252	405 078 5405	TR 2SK301-R
D252	407 012 5809	DIODE 1SS176
or	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D253	407 051 4306	ZENER DIODE GZS12Y

EXPLODED VIEW (CABINET & CHASSIS 2/2)

REMOTE CONTROL RBZ60/NX(149-500-03)

Ref. No.	Part No.	Description
	614 218 4615	ASSY, REMOCON
	614 205 6516	LID, BATTERY
	614 205 6660	POLYE COVER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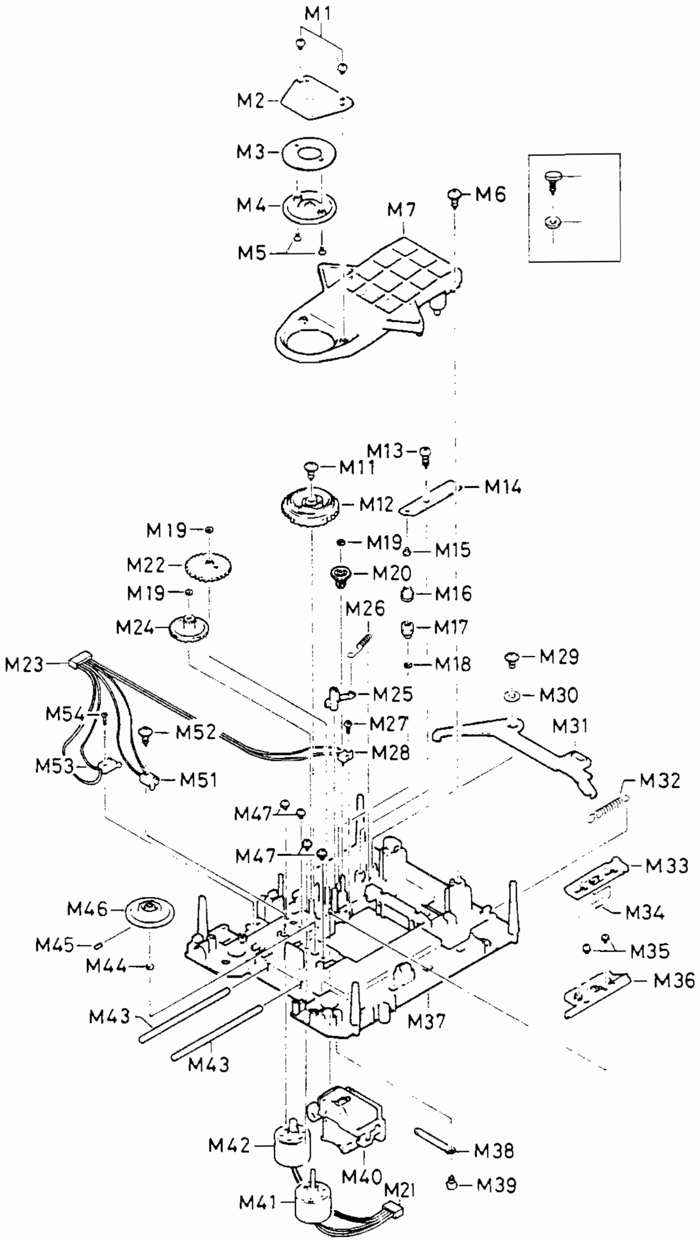
PARTS LIST & EXPLODED VIEW (CD)

CD MECHANISM (PM-DAD680)

Ref. No.	Part No.	Description
M1	411 021 2704	SCR S-TPG BIN 2.6X6, BRACKET FIX
M2	614 205 1481	BRACKET ASSY, CHUCK PULLEY
M3	614 204 9280	PULLEY
M4	614 205 7421	PULLEY, CHUCKING
M5	411 033 2907	SCR FLT 2X4
M6	411 020 8905	SCR S-TPG BRZ+FLG 3X10, LEVER (M7) FIX
M7	614 205 1283	LEVER, CHUCKING
M11	411 021 5705	SCR S-TPG BIN 3X6, CAM GEAR FIX
M12	614 134 8841	GEAR, CAM
M13	411 021 3503	SCR S-TPG BIN 3X10, PATCHET GEAR CONTROL
M14	614 195 7814	SPRING PLATE, GESR FIX
M15	614 197 7539	SPACER, GEAR (M16,M17) FIX
M16	614 197 7645	GEAR, LOADING RATCHET
M17	614 134 8834	GEAR, LOADING RATCHET
M18	412 012 7005	SPECIAL WASHER, 2.1X4X0.25T
M19	412 013 0609	SPECIAL WASHER, 1.6X3.2X0.25T
M20	614 134 8827	GEAR, LOADING
M21	614 213 2012	SOCKET, 4P, MOTOR LEAD
M22	614 134 8872	GEAR, PICK-UP
M23	614 213 2029	SOCKET, 6P, SW LEAD
M24	614 134 8889	GEAR, MECHA RELAY
M25	614 140 1317	LEVER, TRIGGER GEAR
M26	614 151 7056	SPRING COIL, LEVER (M25) PULL
M27	411 022 8408	SCR S-TPG PAN 2X8, CHUCKING SW FIX
M28	614 024 1600	SWITCH, CHUCKING
M29	411 021 3503	SCR S-TPG BIN 3X10, LEVER (M31) FIX
M30	411 092 2900	WASHER Z 3X10X1, LEVER (M30) FIX
M31	614 140 1324	LEVER, CHUCKING CAM
M32	614 151 7063	SPRING COIL, LEVER (M31) PULL
M33	614 134 8919	GEAR, PICK RACK
M34	614 151 7223	SPRING COIL, RACK GEAR
M35	411 044 7502	SCR PAN+SW 2X5, RACK GEAR FIX
M36	614 134 8902	GEAR, PICK RACK
M37	614 215 5790	CHASSIS ASSY
M38	614 129 9136	LUG, LEAD MTG
M39	411 021 5705	SCR S-TPG BIN 3X6, LUG MTG
M40	614 204 5541	PICK UP
M41	614 045 2105	COMMUTATE MOTOR, SPINDLE MOTOR
M42	614 195 8101	COMMUTATE MOTOR ASSY
M43	614 145 9622	SHAFT, PICK UP PAIL
M44	412 032 0208	SPECIAL WASHER
M45	411 063 1109	SCR SET HEX-SCT 2X6, TURN TABLE FIX
M46	614 217 5095	TURNTABLE, SPINDLE
M47	411 044 7205	SCR PAN+SW 2X4
M51	614 018 9223	SWITCH, LIMIT & OPEN END SW
M52	411 020 9902	SCR S-TPG BRZ+FLG 3X8, LIMIT SW FIX
M54	411 104 4205	SCR TPG PAN PCS 1.7X8, OPEN END SW FIX
	614 129 4971	FIXER

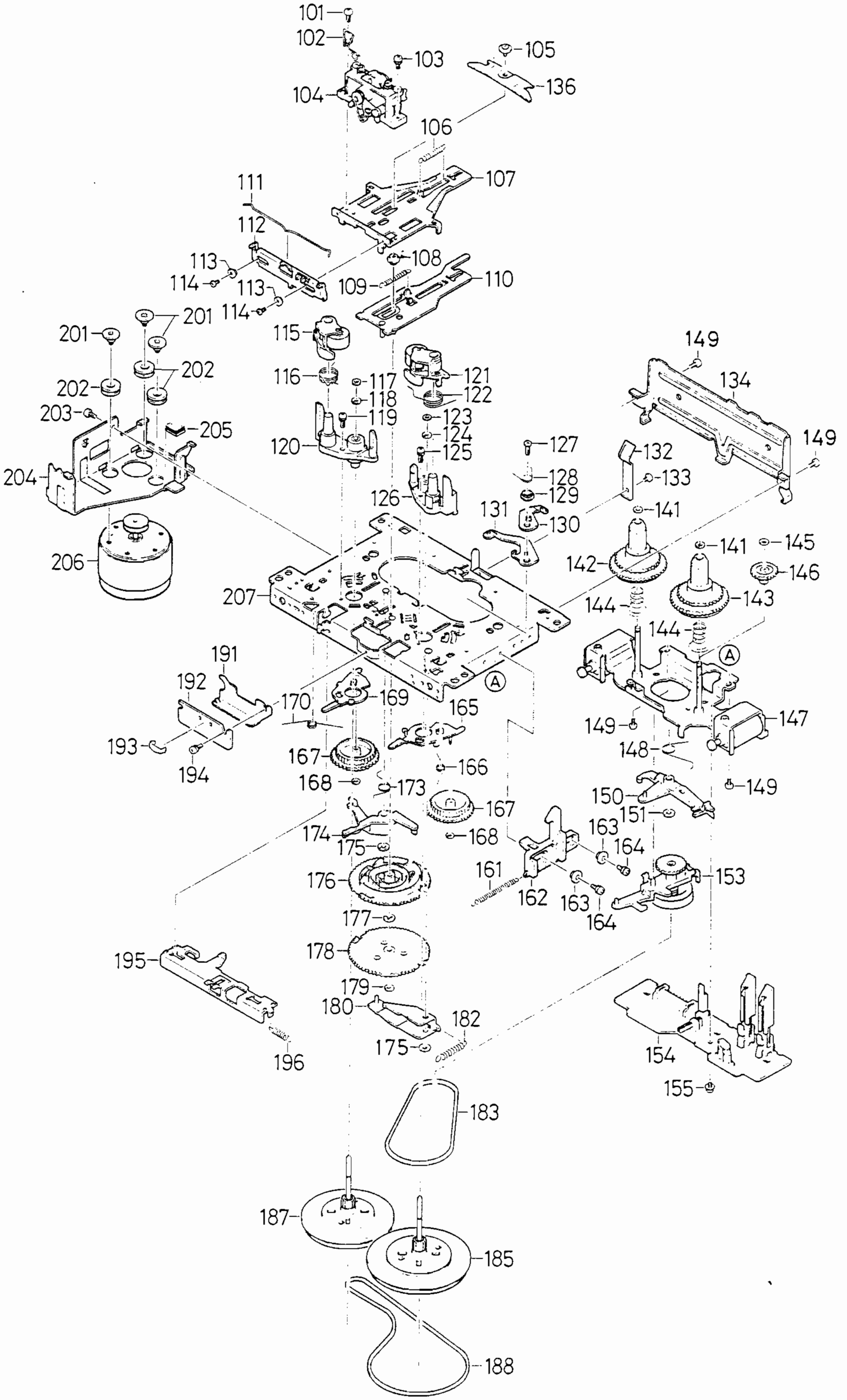


PARTS LIST

TAPE MECHANISM "A" (TM-Z60APTN)

Ref. No.	Part No.	Description
101	412 032 4800	SPECIAL SCREW, BIND M2X5
102	614 206 5105	SPRING, WIRE, HEAD PANEL
103	412 032 2707	SPECIAL SCREW, TAMS M2X5
104	614 207 6200	ASSY, HEAD, PLAY
105	412 032 3001	SPECIAL SCREW, CUPS TAPP M2X5
106	614 206 3286	SPRING, TENS, REVIEW/CUE
107	614 206 3248	SLIDE, HEAD PANEL (A)
108	614 212 5991	COLLAR, PANEL
109	614 206 3293	SPRING, TENS, PANEL SPRING
110	614 206 2821	ASSY, SLIDE, HEAD PANEL (B)
111	614 214 0970	SPRING, WIRE, PINCH ROLLER
112	614 206 3194	LEVER, CHANGE HEAD PINCH ROLLER
113	614 206 3118	COLLAR, LEVER (112) MTG.
114	412 032 2806	SPECIAL SCREW M1.7X3
115	614 212 7476	ASSY, PINCHROLLER (R)
116	614 206 3361	SPRING, WIRE, P ARM (R)
117	412 027 9803	SPECIAL WASHER 2.1X3.5X0.5T
118	412 032 5401	SPECIAL WASHER 1.55X3.5X0.5T
120	614 214 0888	ASSY, BRACKET-E, FLYWHEEL (R)
121	614 212 7469	ASSY, PINCHROLLER (F)
122	614 206 3354	SPRING, WIRE, P ARM (F)
123	412 032 3506	SPECIAL WASHER 2.1X3.5X0.5T
124	412 032 3704	SPECIAL WASHER, 1.8X4X0.5T
125	412 032 3605	SPECIAL SCREW, S TAPP M2X6
126	614 206 2722	ASSY, BRACKET-E, FLYWHEEL
127	412 034 1005	SPECIAL SCREW, S TAPP M2X6
128	614 206 3316	SPRING, WIRE, E STOPPER
129	614 206 3095	COLLAR, E STOPPER
130	614 206 3163	LEVER, E STOPPER A
131	614 206 3156	LEVER, E STOPPER B
132	614 206 3200	PLATE, CASSETTE HOLDER
133	412 027 2606	SPECIAL SCREW, C TAPP, M2X3
134	614 206 3224	SLIDE, SW PROTECTOR
136	614 215 7428	SPRING, PLATE, HEAD PANEL
141	412 032 3902	SPECIAL WASHER
142	614 207 2158	ASSY, REEL, TAKE UP (R)
143	614 206 4399	ASSY, REEL, TAKE UP (F)
144	614 206 3309	SPRING, COMP, BACK TENSION (R)
145	412 013 4904	SPECIAL WASHER 1.2X3X0.25T
146	614 206 4658	GEAR, F.FWD
147	614 207 6231	ASSY, BRACKET-M, REEL BASE
148	614 206 5099	SPRING, WIRE, FR TRIGGER ARM
149	412 026 2003	SPECIAL SCREW, C TAPPING M2X4
150	614 206 3149	LEVER, RF TRIGGER ARM
151	412 032 3803	SPECIAL WASHER 2.1X5X0.4T
153	614 206 4436	ASSY, PULLEY, REW/F.FWD CLUTCH
154	614 212 5755	ASSY, PCB, MECHANISM SWITCH
	614 210 0257	PCB
	614 206 3538	SWITCH, LEAF
	614 206 5112	SWITCH, LEAF
	614 206 5129	SWITCH, LEAF
	614 206 2968	HOLDER
	614 017 3888	PLUG
	409 128 5209	IC LB9051A
	407 004 9105	DIODE DSF10C
155	412 032 2509	SPECIAL SCREW, S TAPP TAMS M2X5
161	614 215 7411	SPRING, TENS, EJECT SLIDE RETURN
162	614 208 9583	SLIDE, EJECT
163	614 206 3125	COLLAR, EJECT SLIDE
164	412 032 2509	SPECIAL SCREW, S TAPP TAMS M2X5
165	614 207 2882	ASSY, LEVER, TAKE-UP GEAR ARM (F)
166	614 206 3323	SPRING, WIRE, TAKE-UP GEAR ARM (F)
167	614 206 4207	GEAR, TAKE-UP
168	412 013 4904	SPECIAL WASHER 1.2X3X0.25T
169	614 206 4467	ASSY, LEVER, TAKE-UP GEAR ARM (R)
170	614 206 3330	SPRING, WIRE, TAKE-UP GEAR ARM (R)
173	614 206 3347	SPRING, WIRE, MAIN TRIGGER ARM
174	614 206 3170	LEVER, MAIN TRIGGER ARM
175	412 032 3308	SPECIAL WASHER 2.1X5X0.4T
176	614 206 3002	GEAR, MAIN
177	412 032 3100	SPECIAL WASHER, E RING D2.0
178	614 206 3019	GEAR, REW/F.FWD CAM
179	412 032 3209	SPECIAL WASHER 1.5X3.5X0.5T
180	614 206 2807	ASSY, LEVER, PANEL KICK
182	614 215 7404	SPRING, TENS
183	614 206 4849	BELT, FLAT, REW/F.FWD
185	614 206 2777	ASSY, FLYWHEEL (F)
187	614 206 2760	ASSY, FLYWHEEL (R)
188	614 206 3064	BELT, FLAT, MAIN
191	614 206 5006	PLATE, SHIELD
192	614 206 3408	PCB, RELAY BOARD
193	614 206 2975	FIXER, WIRE CLAMP
194	412 032 2509	SPECIAL SCREW, S TAPP M2X5
195	614 206 2814	ASSY, SLIDE, CHANGE LEVER
196	614 206 3279	SPRING, TENS, CHANGE SLIDE LEVER
201	412 032 4008	SPECIAL SCREW, MOTOR
202	614 206 2944	CUSHION, RUBBER, MOTOR
203	412 026 2003	SPECIAL SCREW, C TAPP M2X4
204	614 206 2890	BRACKET-M, MOTOR
205	614 206 2951	CUSHION, MOTOR BRACKET
206	614 207 1298	COMMUTATE MOTOR ASSY
207	614 206 2708	ASSY, CHASSIS

XPLODED VIEW (MECHANISM TAPE "A")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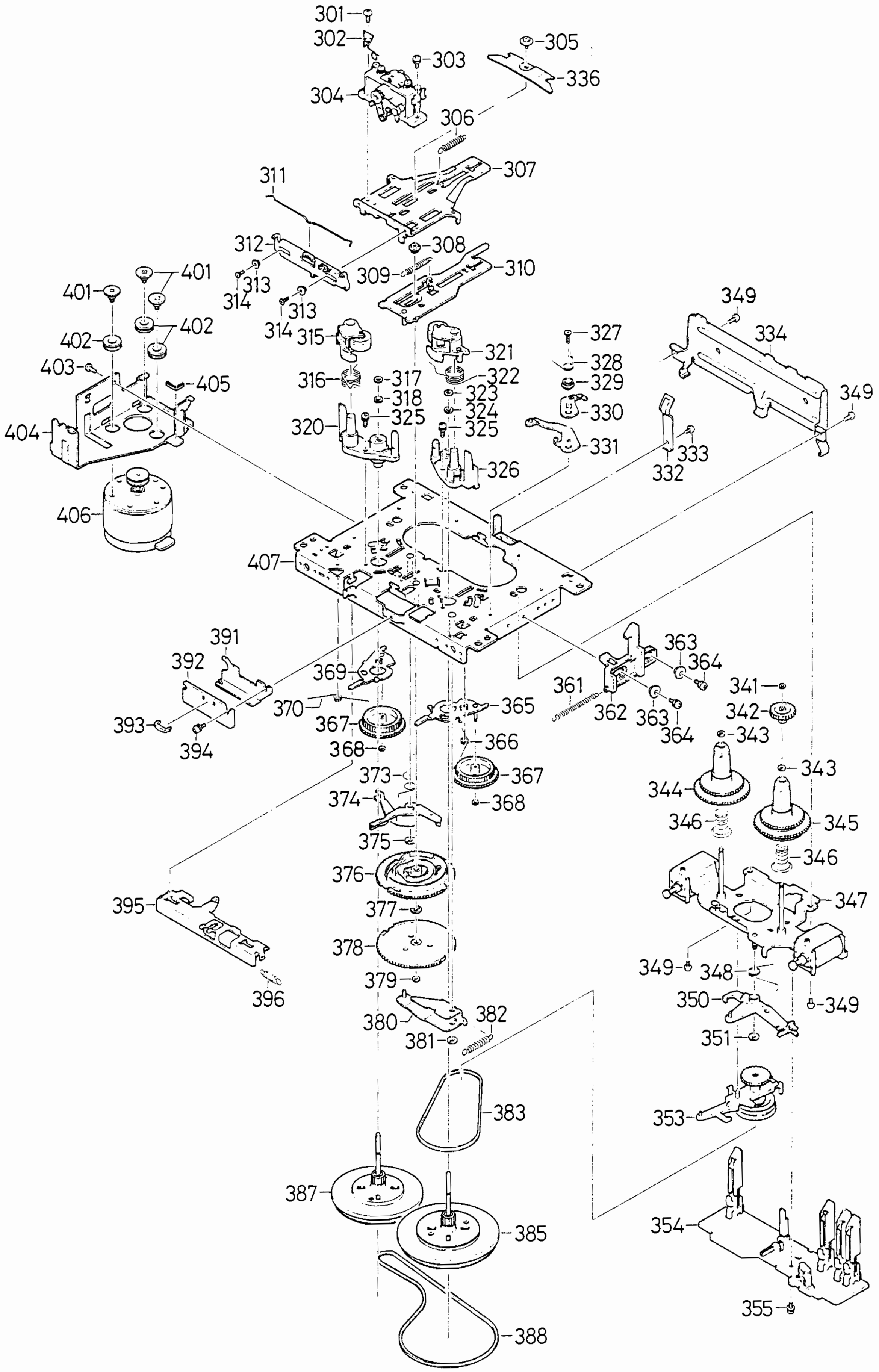
PARTS LIST

TAPE MECHANISM "B" (TM-Z60ARTN)

Ref. No.	Part No.	Description
301	412 032 4800	SPECIAL SCREW, BAIND M2X5
302	614 206 5105	SPRING, WIRE, HEAD PANEL
303	412 032 2707	SPECIAL SCREW, TAMS M2X5
304	614 222 0214	ASSY, HEAD, R/P
305	412 032 3001	SPECIAL SCREW, CUPS TAPP M2X5
306	614 206 3286	SPRING, TENS, REVIEW/CUE
307	614 206 3248	SLIDE, HEAD PANEL (A)
308	614 212 5991	COLLAR, PANEL
309	614 206 3293	SPRING, TENS, PANEL SPRING
310	614 206 2821	ASSY, SLIDE, HEAD PANEL (B)
311	614 214 0970	SPRING, WIRE, PINCH ROLLER
312	614 206 3194	LEVER, CHANGE HEAD PINCH ROLLER
313	614 206 3118	COLLAR, LEVER (312) MTG.
314	412 032 2806	SPECIAL SCREW, M1.7X3
315	614 212 7476	ASSY, PINCHROLLER (R)
316	614 206 3361	SPRING, WIRE, PINCH ROLLER (R)
317	412 027 9803	SPECIAL WASHER, 2.1X3.5X0.5
318	412 032 5401	SPECIAL WASHER, 1.5X3.5X0.5T
320	614 214 0888	ASSY, BRACKET-E, FLYWHEEL (R)
321	614 212 7469	ASSY, PINCHROLLER (F)
322	614 206 3354	SPRING, WIRE, PINCH ROLLER (F)
323	412 032 3506	SPECIAL WASHER, 2.1X3.5X0.5
324	412 032 3704	SPECIAL WASHER, 1.8X4X0.5T
325	412 032 3605	SPECIAL SCREW, S TAPP M2X6
326	614 206 2722	ASSY, BRACKET-E, FLYWHEEL
327	412 034 1005	SPECIAL SCREW, S TAPP M2X6 LEVER (330,331) MTG.
328	614 206 3316	SPRING, WIRE, EJECT STOPPER
329	614 206 3095	COLLAR, E STOPPER
330	614 206 3163	LEVER, E STOPPER A
331	614 206 3156	LEVER, E STOPPER B
332	614 206 3200	PLATE, CASSETTE HOLDER
333	412 027 2606	SPECIAL SCREW, C TAPP M2X3
334	614 206 3224	SLIDE, SW PROTECTOR
335	412 026 2003	SPECIAL SCREW, C TAPPING M2X4MM
336	614 215 7428	SPRING, PLATE, HEAD PANEL
341	412 013 4904	SPECIAL WASHER, 1.2X3X0.25T
342	614 206 4658	GEAR, F.FWD
343	412 032 3902	SPECIAL WASHER, 1.4X3.2X0.4T
344	614 207 2158	ASSY, REEL, TAKE-UP (R)
345	614 206 4399	ASSY, REEL, TAKE-UP (F)
346	614 206 3309	SPRING, COMP, BACK TENSION (R)
347	614 207 6231	ASSY, BRACKET-M, REEL BASE
348	614 206 5099	SPRING, WIRE, FR TRIGGER ARM
349	412 026 2003	SPECIAL SCREW, C TAPPING M2X4
350	614 206 3149	LEVER, RF TRIGGER ARM
351	412 013 7608	SPECIAL WASHER, 2.1X5X0.5
353	614 206 4436	ASSY, PULLEY, REWF.FWD CLUTCH
354	614 215 7947	ASSY, PCB, MECHANISM SWITCH
	614 210 0257	PCB
	614 206 3538	SWITCH, LEAF
	614 206 5112	SWITCH, LEAF
	614 206 5129	SWITCH, LEAF
	409 128 5209	IC LB9051A
	614 206 2968	HOLDER
	614 017 3901	PLUG
	407 004 9105	DIODE DSF10C
355	412 032 2509	SPECIAL SCREW, S TAPP TAMS M2X5
361	614 215 7411	SPRING, TENS, EJECT SLIDE RETURN
362	614 208 9583	SLIDE, EJECT
363	614 206 3125	COLLAR
364	412 032 2509	SPECIAL SCREW, S TAPP TAMS M2X5
365	614 207 2882	ASSY, LEVER, TAKE-UP GEAR ARM (F)
366	614 206 3323	SPRING, WIRE, TAKE-UP GEAR ARM (F)
367	614 206 4207	GEAR, TAKE-UP
368	412 013 4904	SPECIAL WASHER, 1.2X3X0.25T
369	614 206 4467	ASSY, LEVER, TAKE-UP GEAR ARM (R)
370	614 206 3330	SPRING, WIRE, TAKE-UP GEAR ARM (R)
373	614 206 3347	SPRING, WIRE, MAIN TRIGGER ARM
374	614 206 3170	LEVER, MAIN TRIGGER ARM
375	412 032 3308	SPECIAL WASHER, 2.1X5X0.4T
376	614 206 3002	GEAR, MAIN
377	412 032 3100	SPECIAL WASHER, RING D2.0
378	614 206 3019	GEAR, REW/F.FWD CAM
379	412 032 3209	SPECIAL WASHER 1.5X3.5X0.5T
380	614 206 2807	ASSY, LEVER, PANEL KICK
382	614 215 7404	SPRING, TENS, PANEL KICK LEVER
383	614 206 4849	BELT, FLAT, REW/F.FWD
385	614 206 2777	ASSY, FLYWHEEL (F)
387	614 206 2760	ASSY, FLYWHEEL (R)
388	614 206 3064	BELT, FLAT, MAIN
391	614 206 5006	PLATE, SHIELD
392	614 206 1954	PCB, RELAY BOARD
393	614 206 2975	FIXER, WIRE CLAMP
394	412 032 2509	SPECIAL SCREW, S TAPP M2X5
395	614 206 2814	ASSY, SLIDE, CHANGE LEVER
396	614 206 3279	SPRING, TENS, CHANGE SLIDE LEVER
401	412 032 4008	SPECIAL SCREW, MOTOR
402	614 206 2944	CUSHION, RUBBER, MOTOR
403	412 026 2003	SPECIAL SCREW, C TAPP M2X4
404	614 206 2890	BRACKET-M, MOTOR
405	614 206 2951	CUSHION, MOTOR BRACKET
406	614 207 1298	COMMUTATE MOTOR ASSY
407	614 206 2708	ASSY, CHASSIS

EXPLODED VIEW (MECHANISM TAPE "B")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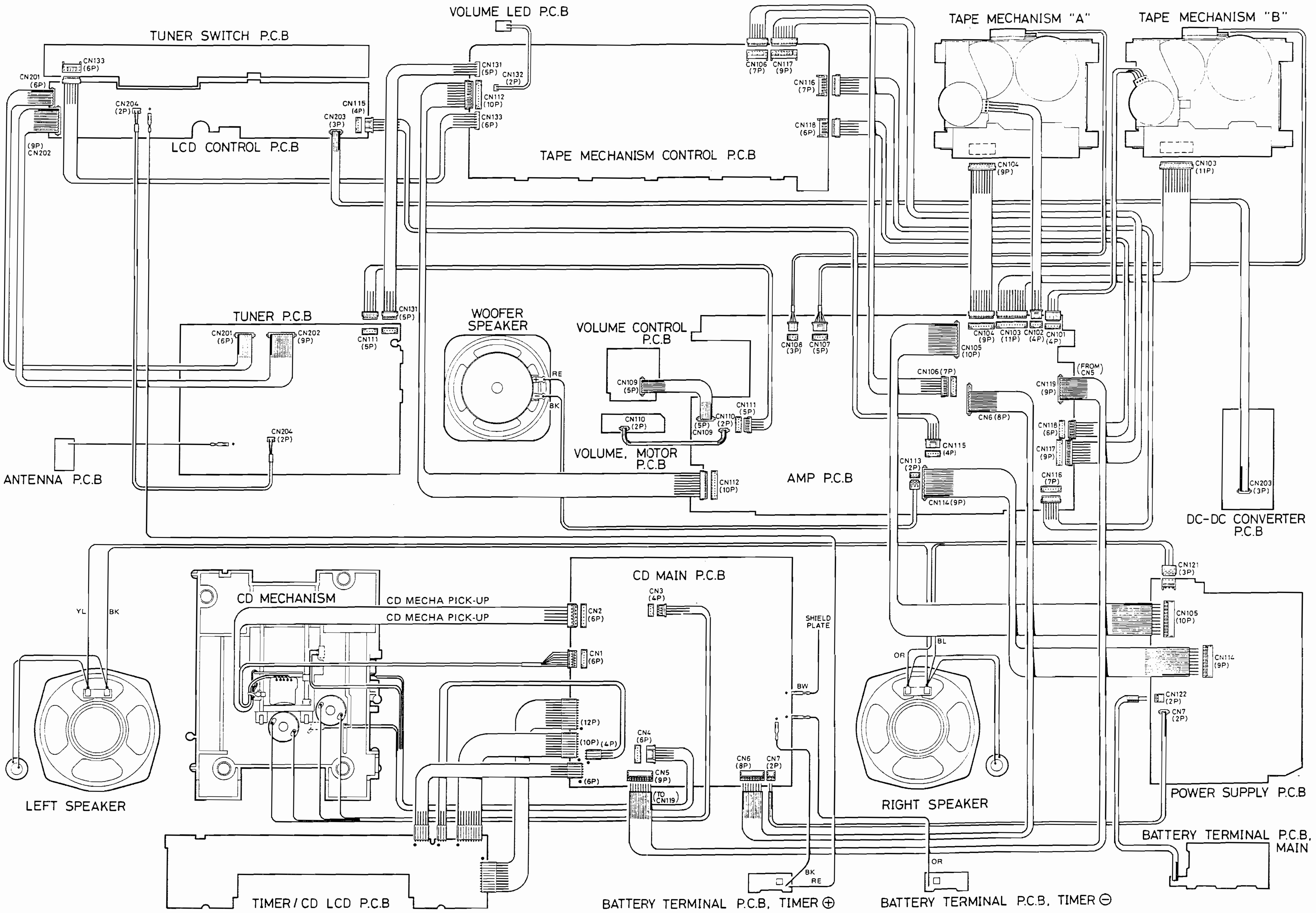
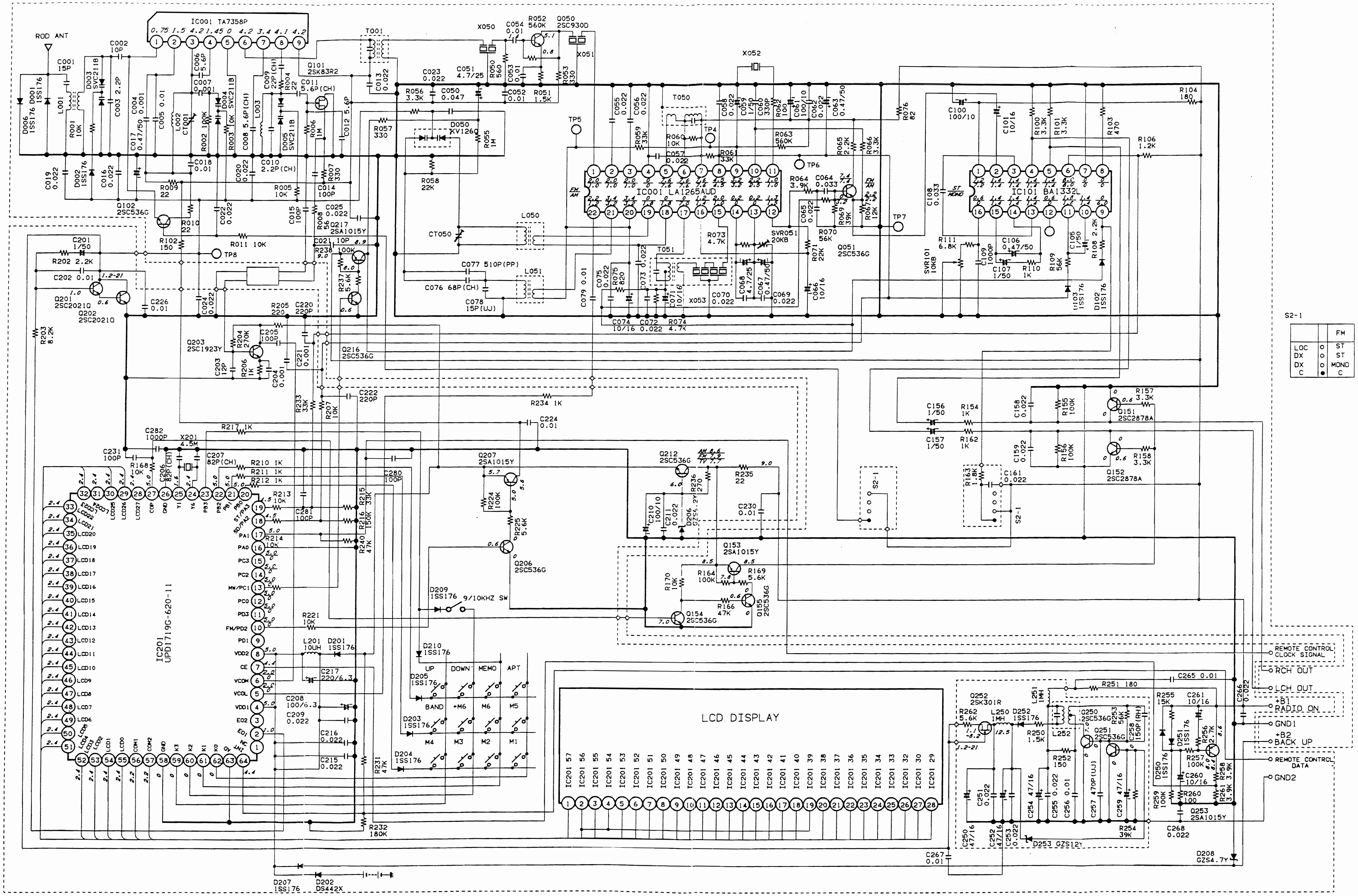
388

CONNECTION (WIRE & SOCKET)


VOLUME LED P.C.B
TUNER SWITCH P.C.B
CN133 (6P)
CN201 (6P)
CN204 (2P)
(9P) CN202
LCD CONTROL P.C.B
CN115 (4P)
CN203 (3P)
CN131 (5P)
CN132 (2P)
CN112 (10P)
CN133 (6P)
TAPE MECHANISM CONTROL P.C.B
CN106 (7P)
CN117 (9P)
CN116 (7P)
CN118 (6P)
TAPE MECHANISM "A"
TAPE MECHANISM "B"
CN104 (9P)
CN103 (11P)
TUNER P.C.B
CN201 (6P)
CN202 (9P)
CN131 (5P)
CN111 (5P)
WOOFER SPEAKER
RE
BK
VOLUME CONTROL P.C.B
CN109 (5P)
CN110 (2P)
CN111 (5P)
(5P) CN109
CN110 (2P)
VOLUME, MOTOR P.C.B
CN112 (10P)
CN108 (3P)
CN107 (5P)
CN104 (9P)
CN103 (11P)
CN102 (4P)
CN101 (4P)
CN105 (10P)
CN106 (7P)
(FROM CN5)
CN119 (9P)
CN6 (8P)
CN118 (6P)
CN117 (9P)
CN116 (7P)
CN115 (4P)
CN113 (2P)
CN114 (9P)
AMP P.C.B
ANTENNA P.C.B
CN204 (2P)
CN203 (3P)
DC-DC CONVERTER P.C.B
CN121 (3P)
CD MAIN P.C.B
CD MECHANISM
CD MECHA PICK-UP
CD MECHA PICK-UP
CN2 (6P)
CN3 (4P)
CN1 (6P)
SHIELD PLATE
BW
(12P)
(10P) (4P)
(6P)
CN4 (6P)
CN5 (9P)
(TO CN119)
CN6 (8P)
CN7 (2P)
CN105 (10P)
CN114 (9P)
CN122 (2P)
CN7 (2P)
YL
BK
OR
BL
LEFT SPEAKER
RIGHT SPEAKER
POWER SUPPLY P.C.B
BATTERY TERMINAL P.C.B, MAIN
TIMER / CD LCD P.C.B
BK
RE
OR
BATTERY TERMINAL P.C.B, TIMER ⊕
BATTERY TERMINAL P.C.B, TIMER ⊖

SCHEMATIC DIAGRAM (TUNER)

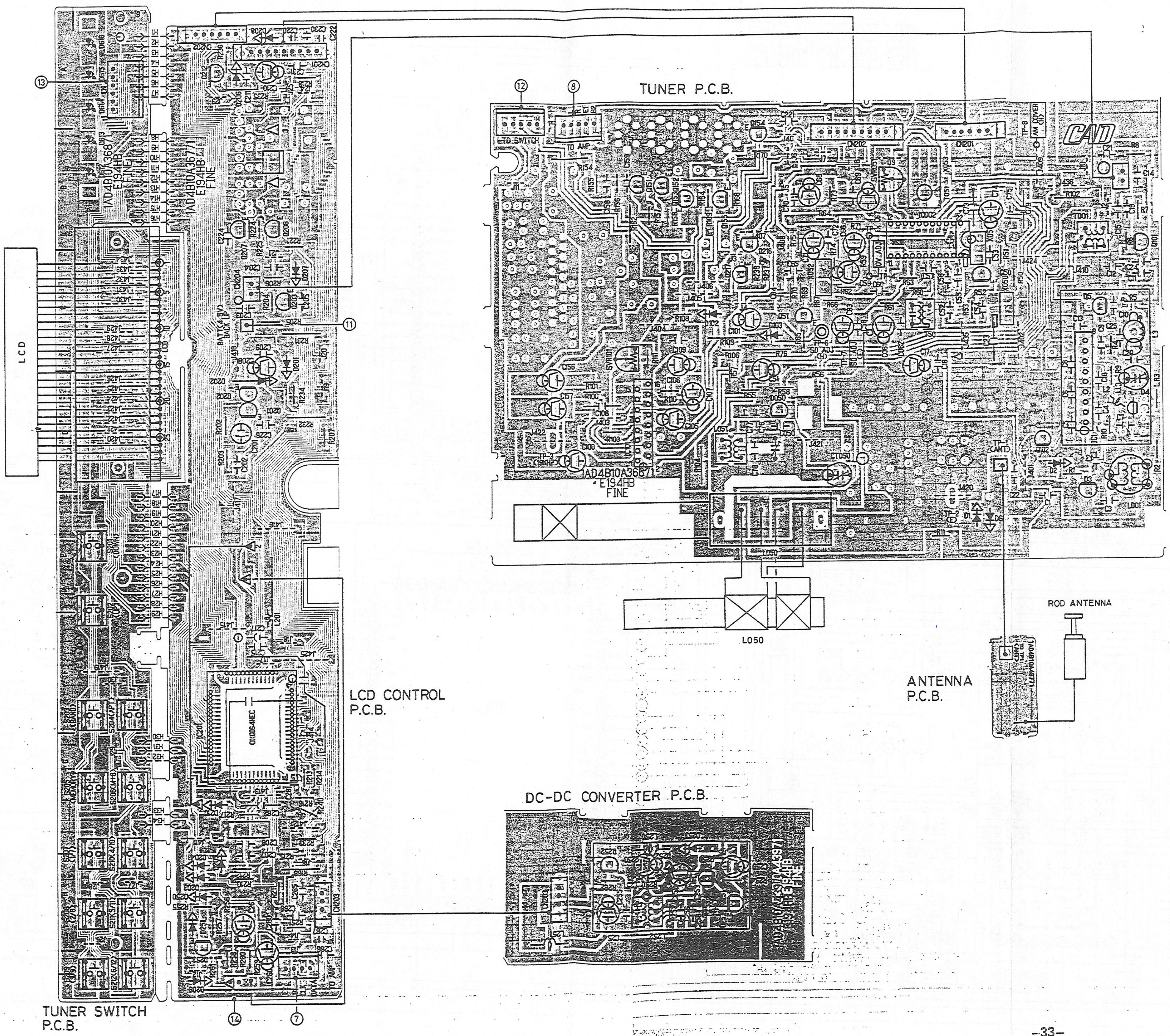


ROD ANT
IC001 TA7358P
0.75 1.5 4.2 1.45 0 4.2 3.4 4.1 4.2
T001
X050
C054 0.01
R052 560K
Q050 2SC930D
X051
X052
C001 15P
C002 10P
D003 SVC211B
C003 2.2P
C004 0.001
C005 0.01
C006 5.6P
C007 0.001
D004 SVC211B
L001
L002
L003
CT001
R001 10K
R002 100K
R003 10K
C008 5.6P(CH)
C009 22P(CH)
R004 22
C011 5.6P(CH)
Q101 2SK83R2
C012 5.6P
D005 SVC211B
R006 1M
C013 0.022
D006 1SS176
D001 1SS176
C017 0.47/50
C019 0.022
D002 1SS176
C016 0.022
C018 0.01
C020 0.022
C010 2.2P(CH)
R007 330
C014 100P
R005 10K
R009 22
Q102 2SC536G
R010 22
C022 0.022
C015 100P
C025 0.022
R008 56
Q217 2SA1015Y
C023 0.022
C051 4.7/25
R056 3.3K
C050 0.047
R057 330
D050 XV1260
R055 1M
R058 22K
R050 560
C053 0.01
C052 0.01
R051 1.5K
R053 330
TP5
C055 0.022
C056 0.022
T050
R059 33K
R060 10K
TP4
C057 0.022
R061 33K
C058 0.022
C059 1/50
C060 330P
R062 100
C061 100/10
C062 0.082
C063 0.47/50
R063 560K
TP6
R064 3.9K
C064 0.033
R065 2.2K
R066 3.3K
IC001 LA1265AUD
FM AM
R069 39K
R067 12K
TP7
R076 82
C100 100/10
C101 10/16
R100 3.3K
R101 3.3K
R103 470
R104 180
R106 1.2K
C108 0.033
ST MONO
IC101 BA1332L
C201 1/50
R202 2.2K
C202 0.01
Q201 2SC2021Q
Q202 2SC2021Q
R102 150
R011 10K
TP8
C021 10P
R238 100K
R237 5.6K
C226 0.01
R203 8.2K
CT050
L050
C077 510P(PP)
C076 68P(CH)
L051
C078 15P(UJ)
C079 0.01
C075 0.022
R075 820
C073 0.022
T051
C071 10/16
X053
C070 0.022
C068 4.7/25
C067 0.47/50
C069 0.022
R073 4.7K
SVR051 20KB
R070 56K
R071 22K
C065 0.022
C066 10/16
Q051 2SC536G
SVR101 10KB
R111 6.8K
C109 1000P
C106 0.47/50
C107 1/50
R110 1K
R109 56K
C105 1/50
R108 2.2K
D103 1SS176
D102 1SS176
C074 10/16
C072 0.022
R074 4.7K
C024 0.022
R205 220
C220 220P
Q203 2SC1923Y
R204 270K
C205 100P
C203 12P
R206 1K
C221 0.001
C204 0.001
Q216 2SC536G
C222 220P
R233 33K
R207 10K
R234 1K
C156 1/50
R154 1K
C157 1/50
R162 1K
C158 0.022
R155 100K
R157 3.3K
Q151 2SC2878A
C159 0.022
R156 100K
R158 3.3K
Q152 2SC2878A
C224 0.01
R217 1K
C282 1000P
X201 4.5M
C231 100P
R168 10K
C206 82P(CH)
C207 82P(CH)
R210 1K
R211 1K
R212 1K
R213 10K
C281 100P
R214 10K
C280 100P
R215 33K
R216 150K
R240 47K
Q207 2SA1015Y
R224 100K
R225 5.6K
Q206 2SC536G
Q212 2SC536G
AM 8.6 FM 7.9 TV 7.7
R236 270
R235 22
C210 100/10
C211 0.022
D206 GZS5.2Y
C230 0.01
S2-1
R163 1.8K
C161 0.022
Q153 2SA1015Y
R164 100K
R169 5.6K
R170 10K
R166 47K
Q154 2SC536G
Q155 2SC536G
IC201 UPD1719G-620-11
LCD25 LCD26 LCD27 COP GND Y1 Y6 PB3 PB2 PB1 PB0
ST/PA3 SD/PA2 PA1 PA0 PC3 PC2 MW/PC1 PC0 PD3 FM/PD2 PD1 VDD2 CE VCOM VCOL VDD1 EO2 EO1 XI XO
LCD24 LCD23 LCD22 LCD21 LCD20 LCD19 LCD18 LCD17 LCD16 LCD15 LCD14 LCD13 LCD12 LCD11 LCD10 LCD9 LCD8 LCD7 LCD6 LCD5 LCD4 LCD3 LCD2 LCD1 LCD0 COM1 COM2 GND K3 K2 K1 K0 OV INT
R221 10K
L201 10UH
D201 1SS176
C217 220/6.3
C208 100/6.3
C209 0.022
C216 0.022
C215 0.022
R231 47K
R232 180K
D209 1SS176
9/10KHZ SW
D210 1SS176
UP DOWN MEMO APT
D205 1SS176
BAND +M6 M6 M5
D203 1SS176
M4 M3 M2 M1
D204 1SS176
LCD DISPLAY
IC201 57 IC201 56 IC201 55 IC201 54 IC201 53 IC201 52 IC201 51 IC201 50 IC201 49 IC201 48 IC201 47 IC201 46 IC201 45 IC201 44 IC201 43 IC201 42 IC201 41 IC201 40 IC201 39 IC201 38 IC201 37 IC201 36 IC201 35 IC201 34 IC201 33 IC201 32 IC201 31 IC201 30 IC201 29
Q252 2SK301R
L251 1MH
R251 180
C265 0.01
C266 0.022
R262 5.6K
L250 1MH
D252 1SS176
Q250 2SC536G
R253 56K
C258 150P(RH)
Q251 2SC536G
L252
R250 1.5K
R252 150
C251 0.022
C254 47/16
C255 0.022
C256 0.01
C257 470P(UJ)
C259 47/16
R254 39K
C250 47/16
C252 47/16
C253 0.022
D253 GZS12Y
R255 15K
C261 10/16
D251 1SS176
R256 2.7K
D250 1SS176
R257 100K
C260 10/16
R258 3.9K
R261 3.9K
R259 100K
R260 100
Q253 2SA1015Y
C268 0.022
C267 0.01
D208 GZS4.7Y
REMOTE CONTROL CLOCK SIGNAL
RCH OUT
LCH OUT
+B1 RADIO ON
GND1
+B2 BACK UP
REMOTE CONTROL DATA
GND2
D207 1SS176
D202 DS442X

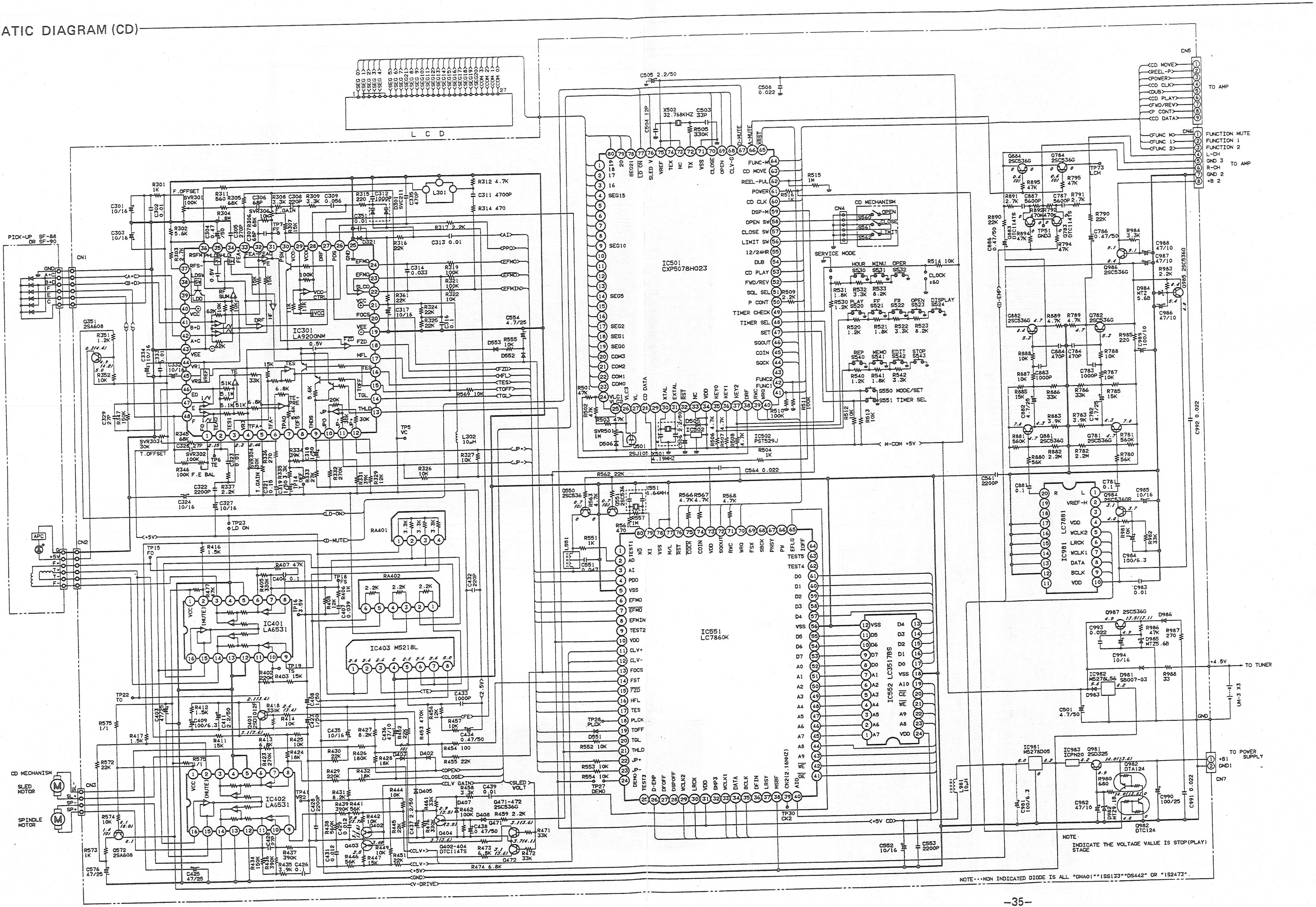
S2-1

		FM
LOC	○	ST
DX	○	ST
DX	○	MONO
C	●	C

WIRING DIAGRAM (TUNER & LCD CONTROL)


⑬
LCD
⑪
LCD CONTROL P.C.B.
TUNER SWITCH P.C.B.
⑭
⑦
⑫
⑧
TUNER P.C.B.
TO SWITCH
TO AMP
CN202
CN201
JAD4B10A3687I
E194HB
FINE
L050
ROD ANTENNA
ANTENNA P.C.B.
DC-DC CONVERTER P.C.B.

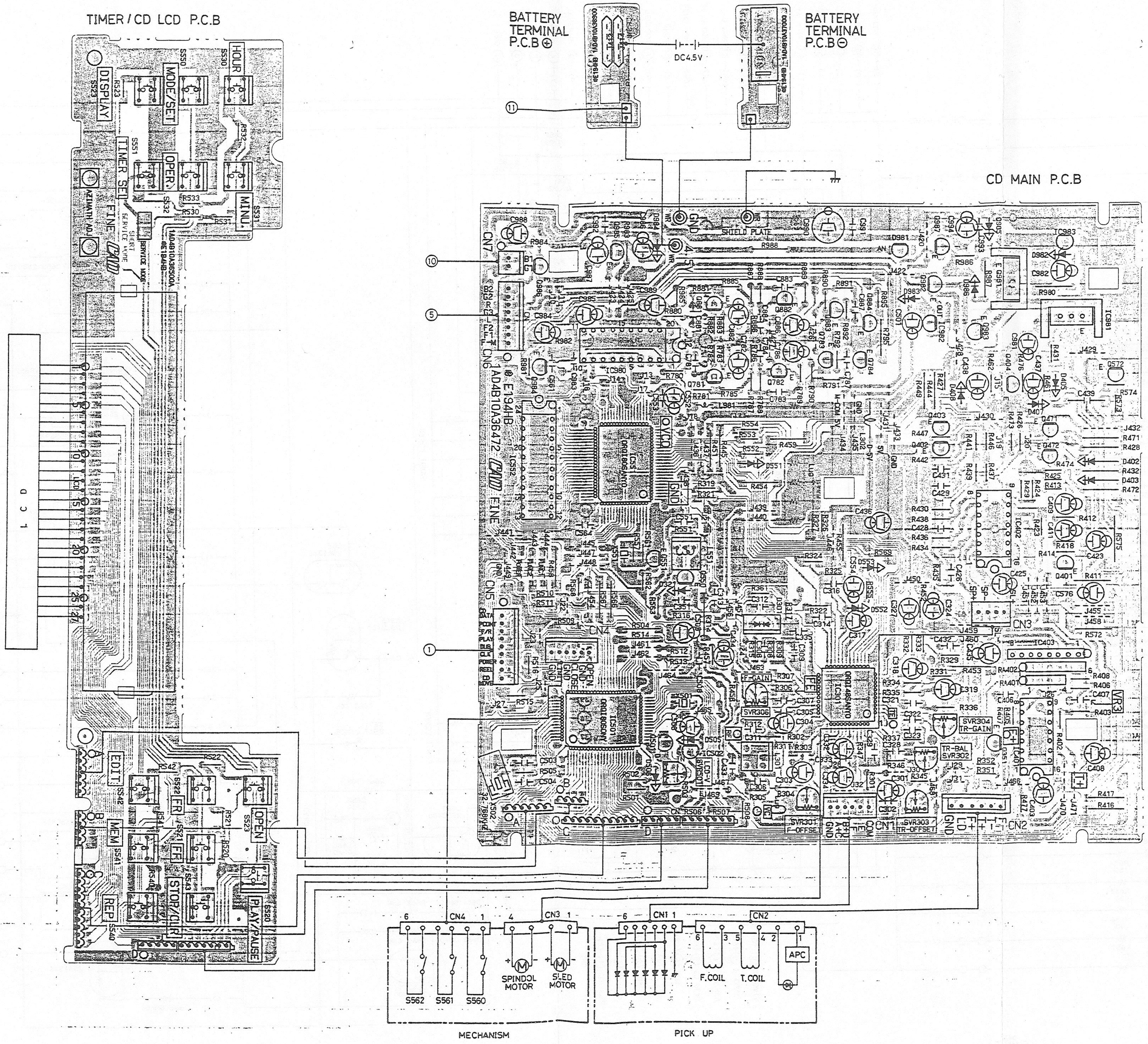
SCHEMATIC DIAGRAM (CD)


L C D
PICK-UP SF-88 OR SF-90
CN1
CN2
CN3
CN4
CN5
CN6
CN7
APC
IC301 LA9200NM
IC401 LA6531
IC402 LA6531
IC403 M5218L
RA401
RA402
IC501 CXP5078H023
IC551 LC7860K
IC552 LC3517BS
IC981 LC7881
IC981 M5278D05
IC982 M5278L56
IC983 ICPN20
CD MECHANISM
SLED MOTOR
SPINDLE MOTOR
SERVICE MODE
HOUR S530
MINU S531
OPER S532
PLAY S520
FF S521
FR S522
OPEN S523
DISPLAY S524
REP S540
MEMO S541
EDIT S542
STOP S543
S550 MODE/SET
S551 TIMER SEL
CLOCK ±60
X501 4.19MHZ
X502 32.768KHZ
X551 16.9344MHz
TO AMP
FUNCTION MUTE
FUNCTION 1
FUNCTION 2
L-CH
GND 3
R-CH
GND 2
+B 2
TO TUNER
TO POWER SUPPLY
+B1
GND1
UM-3 X3
M-COM +5V
+5V CD
CLV-
CLV+
+5V
GND
V-DRIVE
Q351 2SA608
Q572 2SA608
Q401 2SD1012
Q402 DTC114TS
Q403 DTC114TS
Q471-472 2SC536G
Q501 2SJ105
Q550 2SC536
Q551 2SC536
Q684 2SC536G
Q784 2SC536G
Q781 2SC536G
Q782 2SC536G
Q881 2SC536G
Q882 2SC536G
Q883 DTC114TS
Q783 DTC114TS
Q984 2SC536GR
Q985 2SC536G
Q986 2SC536G
Q987 2SC536G
Q981 2SD325
Q982 DTA124
Q982 DTC124
D984 MTZ 5.6B
D985 MTZ5.6B
D982 MTZ9.1B
D981 S8007-03

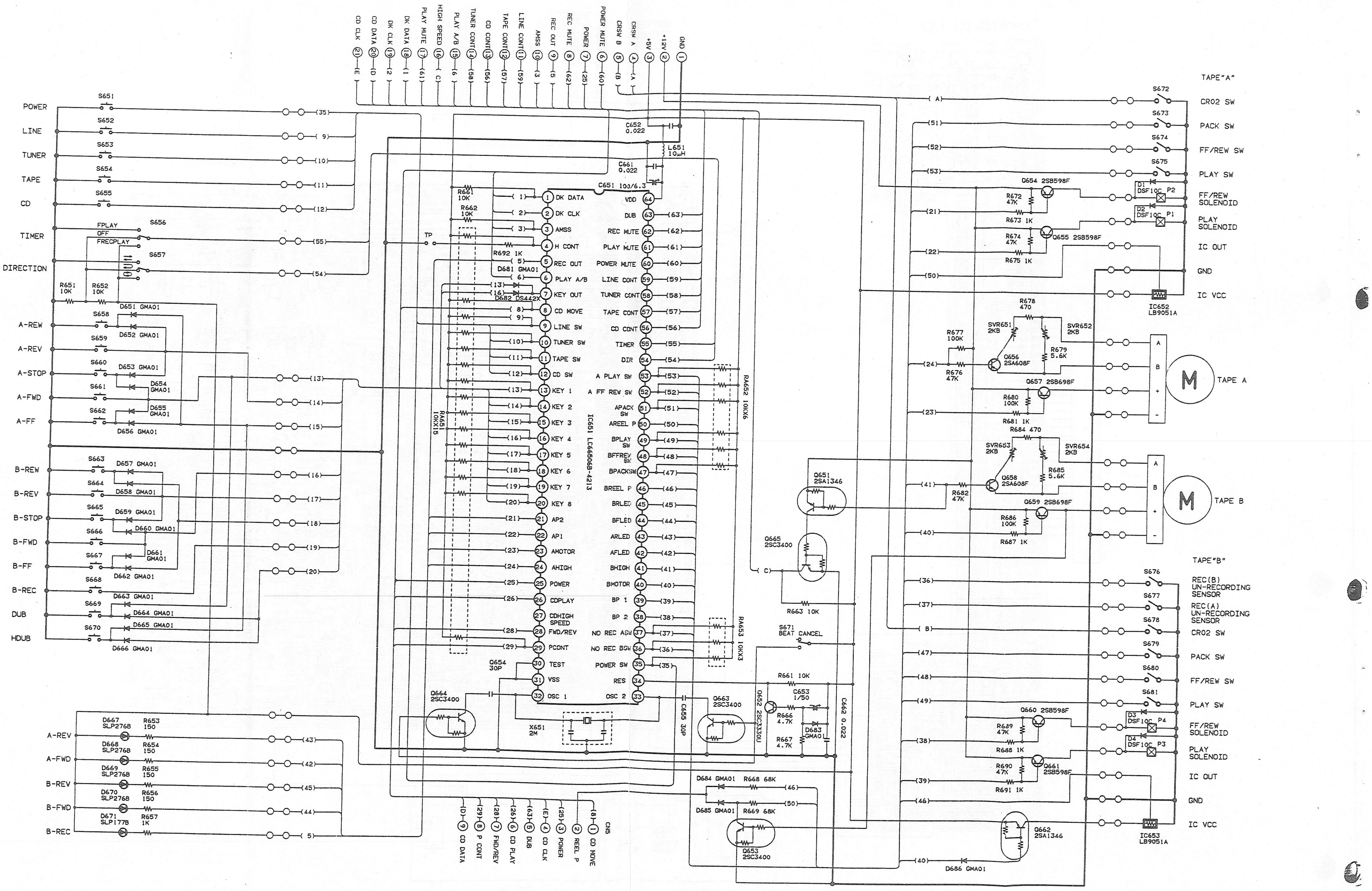
NOTE·
INDICATE THE VOLTAGE VALUE IS STOP(PLAY) STAGE

NOTE···NON INDICATED DIODE IS ALL "GMA01""1SS133""DS442" OR "1S2473".

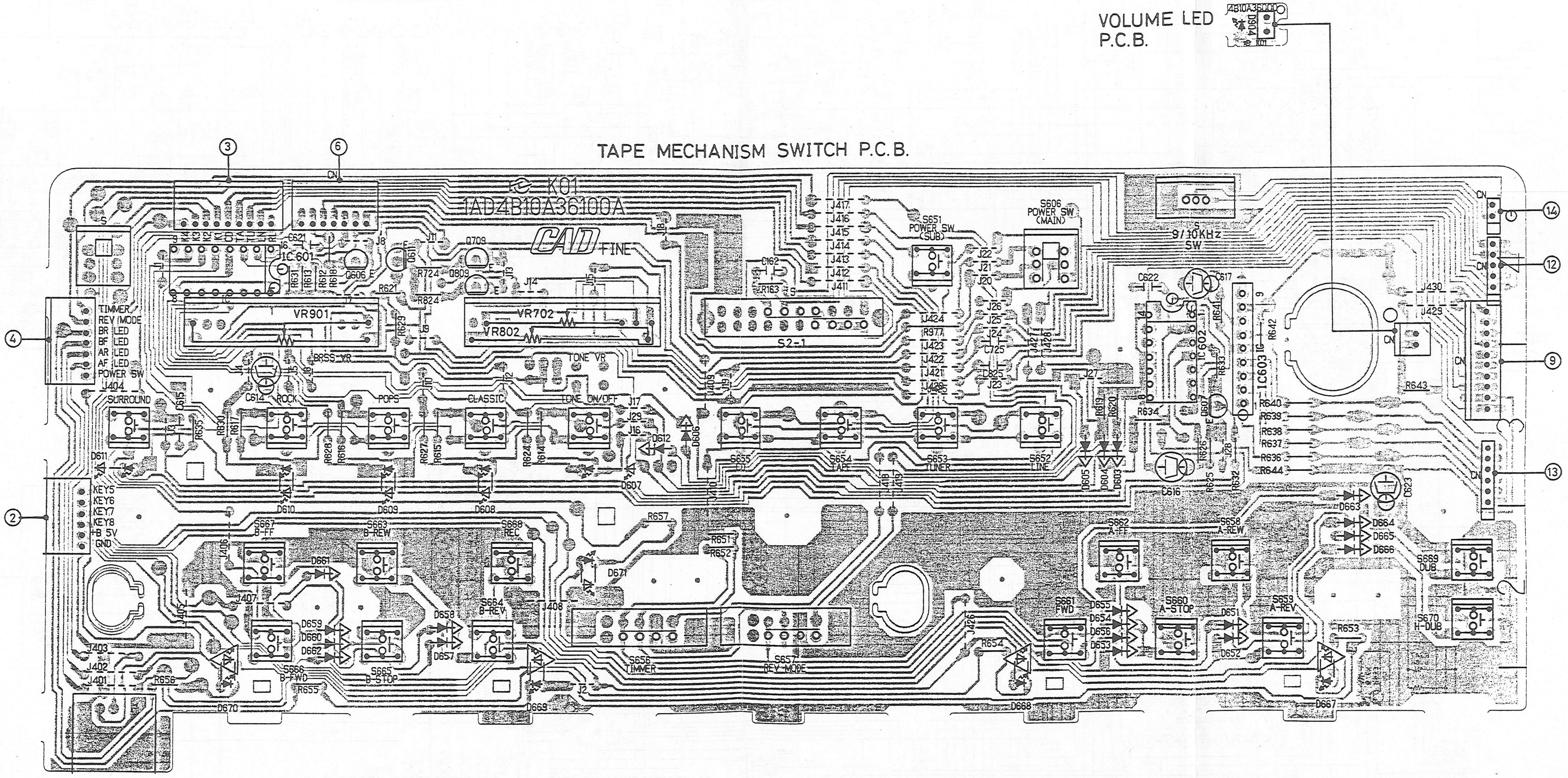
WIRING DIAGRAM (CD & LCD, SW)


TIMER / CD LCD P.C.B
BATTERY TERMINAL P.C.B ⊕
BATTERY TERMINAL P.C.B ⊖
DC4.5V
CD MAIN P.C.B
LCD
DISPLAY
MODE/SET
HOUR
TIMER SET
OPER.
MIN.
FINE
EDIT
MEM
REP
FR
FF
STOP/CLR
OPEN
PLAY/PAUSE
SHIELD PLATE
⑪
⑩
⑤
①
SVR301 F-OFFSET
SVR303 TR-OFFSET
SVR304 TR-GAIN
SVR302 TR-BAL
SVR306
F-GAIN
CN4
CN3
CN1
CN2
SPINDOL MOTOR
SLED MOTOR
S562
S561
S560
F.COIL
T.COIL
APC
MECHANISM
PICK UP

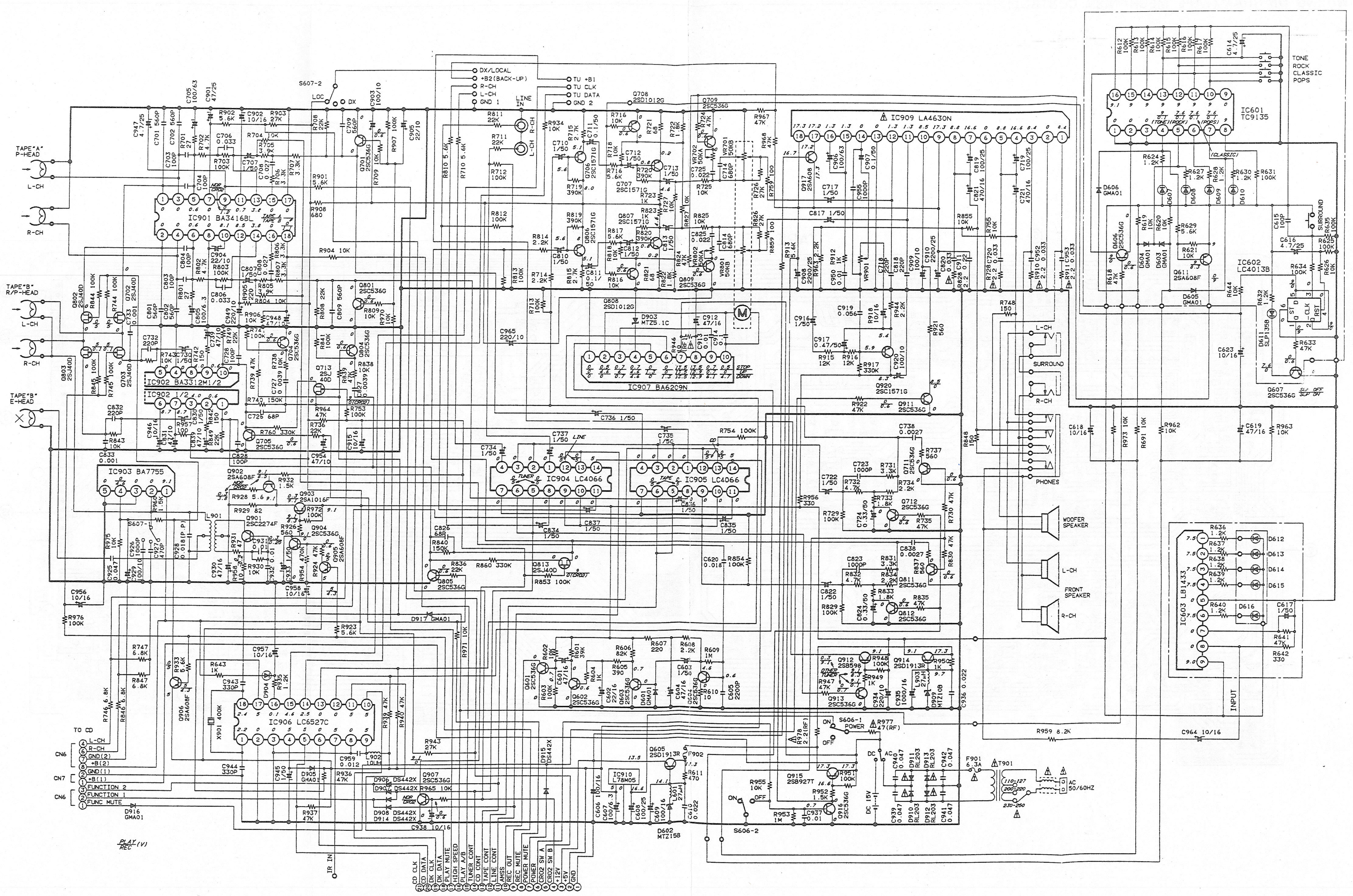
SCHEMATIC DIAGRAM (TAPE MECHANISM CONTROL)


GND ①
+12V ②
+5V ③
CRSW A ④
CRSW B ⑤
POWER MUTE ⑥
POWER ⑦
REC MUTE ⑧
REC OUT ⑨
AMSS ⑩
LINE CONT ⑪
TAPE CONT ⑫
CD CONT ⑬
TUNER CONT ⑭
PLAY A/B ⑮
HIGH SPEED ⑯
PLAY MUTE ⑰
DK DATA ⑱
DK CLK ⑲
CD DATA ⑳
CD CLK ㉑
POWER
LINE
TUNER
TAPE
CD
TIMER
DIRECTION
S651
S652
S653
S654
S655
S656
S657
FPLAY
OFF
FRECPLAY
R651 10K
R652 10K
D651 GMA01
A-REW
A-REV
A-STOP
A-FWD
A-FF
S658
S659
S660
S661
S662
D652 GMA01
D653 GMA01
D654 GMA01
D655 GMA01
D656 GMA01
B-REW
B-REV
B-STOP
B-FWD
B-FF
B-REC
DUB
HDUB
S663
S664
S665
S666
S667
S668
S669
S670
D657 GMA01
D658 GMA01
D659 GMA01
D660 GMA01
D661 GMA01
D662 GMA01
D663 GMA01
D664 GMA01
D665 GMA01
D666 GMA01
A-REV
A-FWD
B-REV
B-FWD
B-REC
D667 SLP276B
D668 SLP276B
D669 SLP276B
D670 SLP276B
D671 SLP177B
R653 150
R654 150
R655 150
R656 150
R657 1K
TP
R661 10K
R662 10K
R692 1K
D681 GMA01
D682 DS442X
RA651 10KX15
C652 0.022
L651 10μH
C661 0.022
C651 100/6.3
IC651 LC6606B-4213
1 DK DATA
2 DK CLK
3 AMSS
4 H CONT
5 REC OUT
6 PLAY A/B
7 KEY OUT
8 CD MOVE
9 LINE SW
10 TUNER SW
11 TAPE SW
12 CD SW
13 KEY 1
14 KEY 2
15 KEY 3
16 KEY 4
17 KEY 5
18 KEY 6
19 KEY 7
20 KEY 8
21 AP2
22 AP1
23 AMOTOR
24 AHIGH
25 POWER
26 CDPLAY
27 CDHIGH SPEED
28 FWD/REV
29 PCONT
30 TEST
31 VSS
32 OSC 1
64 VDD
63 DUB
62 REC MUTE
61 PLAY MUTE
60 POWER MUTE
59 LINE CONT
58 TUNER CONT
57 TAPE CONT
56 CD CONT
55 TIMER
54 DIR
53 A PLAY SW
52 A FF REW SW
51 APACK SW
50 AREEL P
49 BPLAY SW
48 BFFREV SW
47 BPACKSW
46 BREEL P
45 BRLED
44 BFLED
43 ARLED
42 AFLED
41 BHIGH
40 BMOTOR
39 BP 1
38 BP 2
37 NO REC ASW
36 NO REC BSW
35 POWER SW
34 RES
33 OSC 2
RA652 10KX6
RA653 10KX3
Q654 30P
Q664 2SC3400
X651 2M
C655 30P
Q663 2SC3400
Q652 2SC3330U
C662 0.022
CN5
① CD MOVE
② REEL P
③ POWER
④ CD CLK
⑤ DUB
⑥ CD PLAY
⑦ FWD/REV
⑧ P CONT
⑨ CD DATA
Q651 2SA1346
Q665 2SC3400
R663 10K
S671 BEAT CANCEL
R661 10K
C653 1/50
R666 4.7K
R667 4.7K
D683 GMA01
D684 GMA01
R668 68K
D685 GMA01
R669 68K
Q653 2SC3400
TAPE "A"
S672
S673
S674
S675
CR02 SW
PACK SW
FF/REW SW
PLAY SW
Q654 2SB598F
R672 47K
R673 1K
R674 47K
R675 1K
Q655 2SB598F
D1 DSF10C P2
D2 DSF10C P1
FF/REW SOLENOID
PLAY SOLENOID
IC OUT
GND
IC VCC
IC652 LB9051A
R678 470
SVR651 2KB
SVR652 2KB
R677 100K
R676 47K
Q656 2SA608F
R679 5.6K
Q657 2SB698F
R680 100K
R681 1K
A
B
+
-
M
TAPE A
R684 470
SVR653 2KB
SVR654 2KB
Q658 2SA608F
R685 5.6K
R682 47K
Q659 2SB698F
R686 100K
R687 1K
M
TAPE B
TAPE "B"
S676
S677
S678
S679
S680
S681
REC(B) UN-RECORDING SENSOR
REC(A) UN-RECORDING SENSOR
CR02 SW
PACK SW
FF/REW SW
PLAY SW
Q660 2SB598F
R689 47K
R688 1K
R690 47K
R691 1K
Q661 2SB598F
D3 DSF10C P4
D4 DSF10C P3
FF/REW SOLENOID
PLAY SOLENOID
IC OUT
GND
IC VCC
IC653 LB9051A
Q662 2SA1346
D686 GMA01

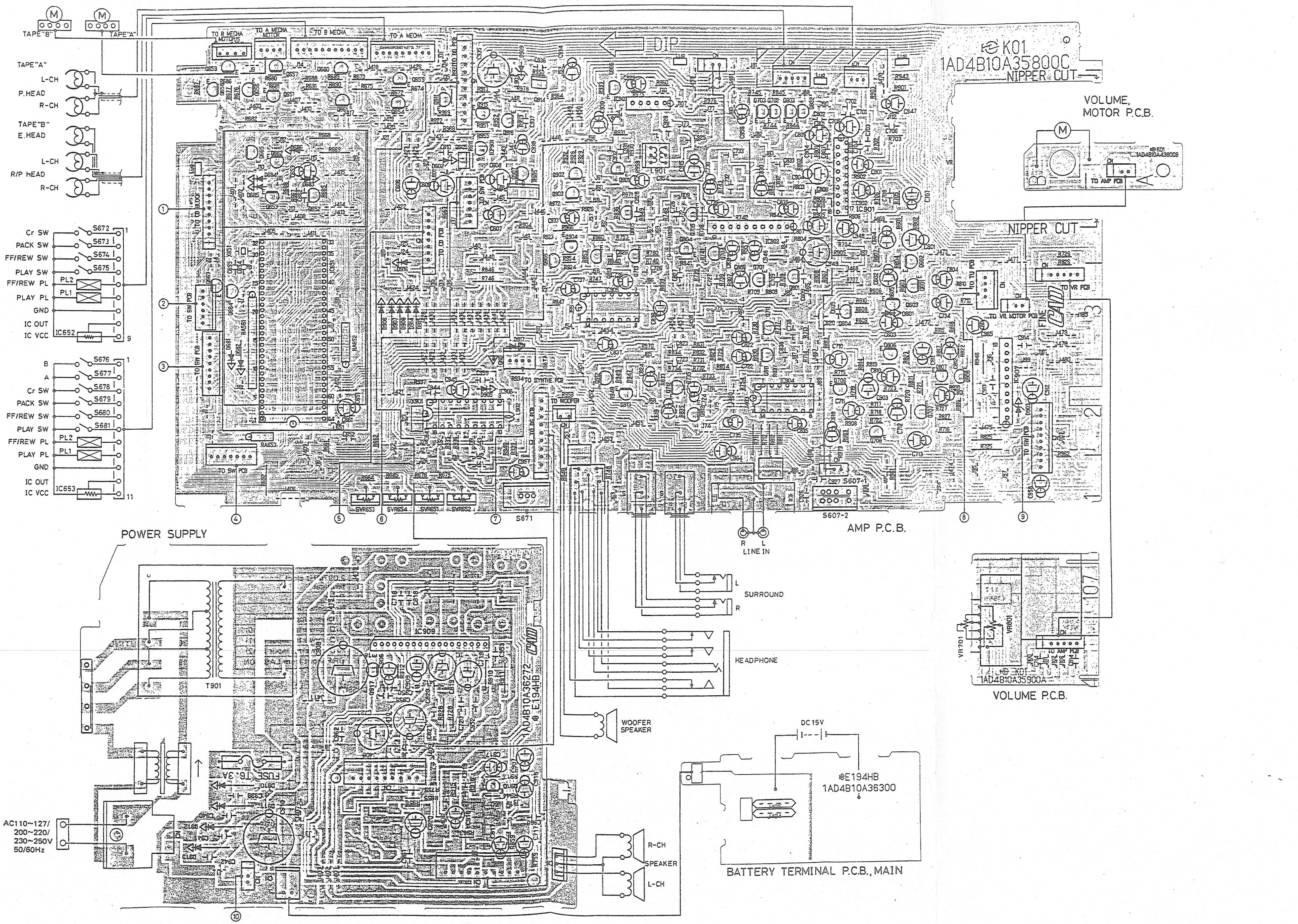
WIRING DIAGRAM (TAPE MECHANISM CONTROL)


VOLUME LED P.C.B.
D904
TAPE MECHANISM SWITCH P.C.B.
③
⑥
④
②
⑭
⑫
⑨
⑬
K01
1AD4B10A36100A
CAD FINE
CN
IC601
C621
Q606
Q709
Q809
R724
R824
R621
R629
VR901
VR702
VR802
BASS VR
TONE VR
TIMMER
REV MODE
BR LED
BF LED
AR LED
AF LED
POWER SW
J404
SURROUND
ROCK
POPS
CLASSIC
TONE ON/OFF
C614
C615
D606
D607
D608
D609
D610
D611
D612
KEY5
KEY6
KEY7
KEY8
+B 5V
GND
S2-1
C162
R163
J411
J412
J413
J414
J415
J416
J417
S651 POWER SW (SUB)
S606 POWER SW (MAIN)
9/10KHz SW
S655 CD
S654 TAPE
S653 TUNER
S652 LINE
C622
C617
IC602
IC603
R634
R640
R639
R638
R637
R636
R644
R643
J430
J429
C616
C623
D603
D604
D605
S667 B-FF
S663 B-REW
S668 REC
S664 B-REV
S666 B-FWD
S665 B-STOP
S656 TIMMER
S657 REV MODE
S661 FWD
S660 A-STOP
S659 A-REV
S662 A-FF
S658 A-REW
S669 DUB
S670 H-DUB
D657
D658
D659
D660
D661
D662
D671
D651
D652
D653
D654
D655
D656
D663
D664
D665
D666
D667
D668
D669
D670
R651
R652
R653
R654
R655
R656
R657
J401
J402
J403
J405
J406
J407
J408
J2

SCHEMATIC DIAGRAM (AMP & POWER SUPPLY)


TAPE"A" P-HEAD
L-CH
R-CH
TAPE"B" R/P-HEAD
TAPE"B" E-HEAD
IC901 BA3416BL
IC902 BA3312M1/2
IC902 1/2
IC903 BA7755
IC904 LC4066
IC905 LC4066
IC906 LC6527C
IC907 BA6209N
IC909 LA4630N
IC910 L78M05
IC601 TC9135
IC602 LC4013B
IC603 LB1433
S607-2
LOC
DX
DX/LOCAL
+B2(BACK-UP)
R-CH
L-CH
GND 1
LINE IN
TU +B1
TU CLK
TU DATA
GND 2
TONE
ROCK
CLASSIC
POPS
SURROUND
PHONES
WOOFER SPEAKER
FRONT SPEAKER
INPUT
S606-1 POWER
S606-2
ON
OFF
DC
AC
F901 6.3A
T901
AC 50/60HZ
110-127
200-220
230-250
TO CD
CN6
CN7
L-CH
R-CH
GND(2)
+B(2)
GND(1)
+B(1)
FUNCTION 2
FUNCTION 1
FUNC MUTE
IR IN
CD CLK
CD DATA
DK CLK
DK DATA
PLAY MUTE
HIGH SPEED
PLAY A/B
TUNER CONT
CD CONT
TAPE CONT
LINE CONT
AMSS
REC OUT
REC MUTE
POWER MUTE
POWER
CRO2 SW A
CRO2 SW B
+12V
+5V
GND
PLAY/REC (V)
M

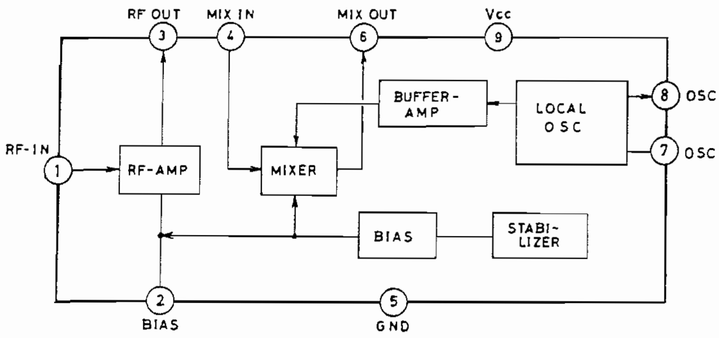
WIRING DIAGRAM (AMP & POWER SUPPLY)


M
TAPE"B"
TAPE"A"
TAPE"A"
L-CH
P.HEAD
R-CH
TAPE"B"
E.HEAD
L-CH
R/P HEAD
R-CH
Cr SW
PACK SW
FF/REW SW
PLAY SW
FF/REW PL
PLAY PL
GND
IC OUT
IC VCC
S672
S673
S674
S675
PL2
PL1
IC652
B
A
S676
S677
S678
S679
S680
S681
IC653
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
TO B MECHA MOTOR
TO A MECHA MOTOR
TO B MECHA
TO A MECHA
DIP
K01
1AD4B10A35800C
NIPPER CUT
VOLUME,
MOTOR P.C.B.
1AD4B10A43800B
TO AMP PCB
TO SW PCB
TO CD PCB
TO SYNTHE PCB
TO WOOFER
TO VR PCB
TO VR MOTOR PCB
SVR653
SVR654
SVR651
SVR652
S671
S607-1
S607-2
AMP P.C.B.
R
L
LINE IN
POWER SUPPLY
T901
IC909
1AD4B10A36272
E194HB
FUSE T6.3A
AC110~127/
200~220/
230~250V
50/60Hz
SURROUND
L
R
HEADPHONE
WOOFER
SPEAKER
R-CH
SPEAKER
L-CH
DC15V
E194HB
1AD4B10A36300
BATTERY TERMINAL P.C.B.,MAIN
VR701
VR801
K01
1AD4B10A35900A
VOLUME P.C.B.

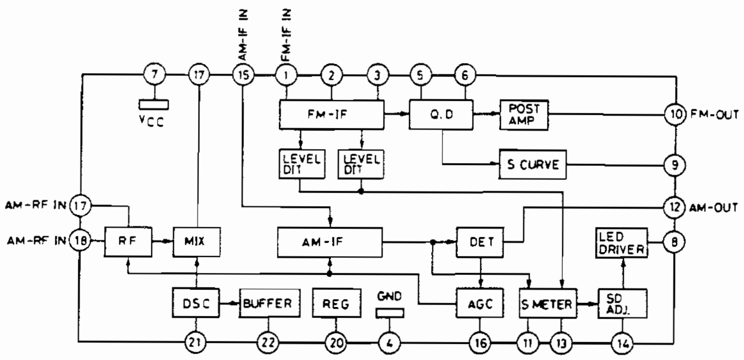
IC BLOCK DIAGRAM

* Please look at the Schematic Diagram if it does not listed the IC BLOCK DIAGRAM.

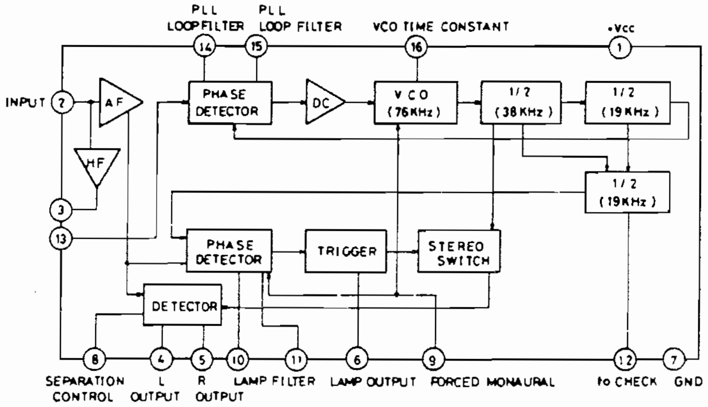
IC001 TA7358P (FM Front End)


RF OUT
MIX IN
MIX OUT
Vcc
3
4
6
9
BUFFER-AMP
LOCAL OSC
8 OSC
7 OSC
RF-IN
1
RF-AMP
MIXER
BIAS
STABI-LIZER
2
BIAS
5
GND

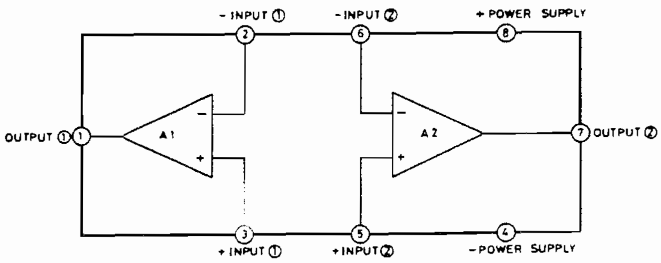
IC002 LA1265AUD (Tuner System)


AM-IF IN
FM-IF IN
7
17
15
1
2
3
5
6
VCC
FM-IF
Q.D
POST AMP
10 FM-OUT
LEVEL DIT
LEVEL DIT
S CURVE
9
AM-RF IN 17
12 AM-OUT
AM-RF IN 18
RF
MIX
AM-IF
DET
LED DRIVER
8
OSC
BUFFER
REG
GND
AGC
S METER
SD ADJ.
21
22
20
4
16
11
13
14

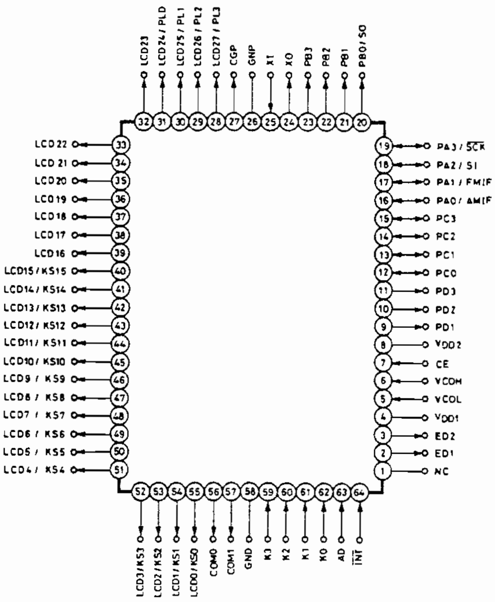
IC101 BA1332L (FM MPX)


PLL LOOP FILTER
PLL LOOP FILTER
VCO TIME CONSTANT
+Vcc
14
15
16
1
INPUT 2
AF
HF
PHASE DETECTOR
DC
V C O (76KHz)
1/2 (38 KHz)
1/2 (19KHz)
1/2 (19KHz)
3
13
PHASE DETECTOR
TRIGGER
STEREO SWITCH
DETECTOR
8
4
5
10
11
6
9
12
7
SEPARATION CONTROL
L OUTPUT
R OUTPUT
LAMP FILTER
LAMP OUTPUT
FORCED MONAURAL
fo CHECK
GND

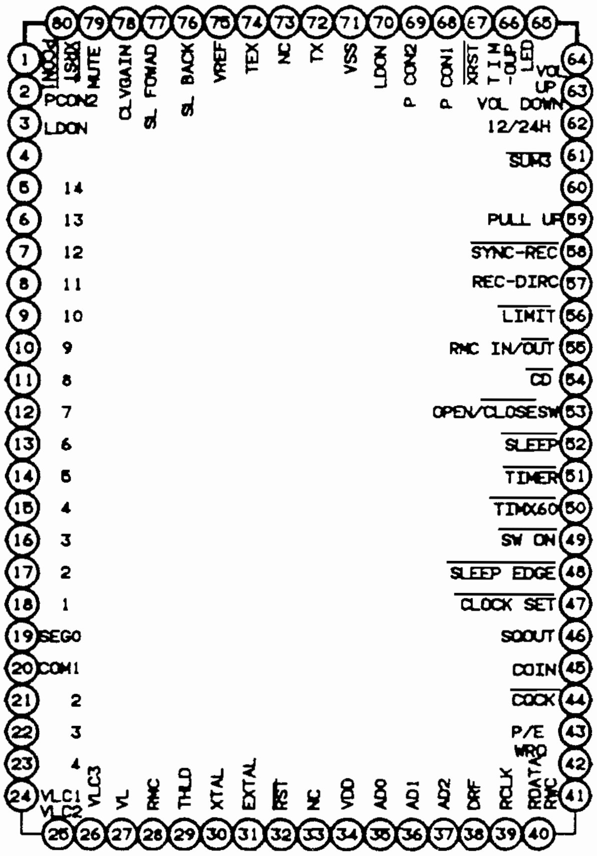
IC403 M5218L (Operation Amp.)


- INPUT ①
- INPUT ②
+ POWER SUPPLY
2
6
8
OUTPUT ① 1
A1
A2
7 OUTPUT ②
3
5
4
+ INPUT ①
+ INPUT ②
- POWER SUPPLY

IC201 μPD1719G-620 (Tuner PLL Synthesizer)


LCD23 32
LCD24 / PLD 31
LCD25 / PL1 30
LCD26 / PL2 29
LCD27 / PL3 28
CGP 27
GNP 26
X1 25
XO 24
PB3 23
PB2 22
PB1 21
PB0 / SO 20
LCD22 33
LCD 21 34
LCD20 35
LCD19 36
LCD18 37
LCD17 38
LCD16 39
LCD15 / KS15 40
LCD14 / KS14 41
LCD13 / KS13 42
LCD12 / KS12 43
LCD11 / KS11 44
LCD10 / KS10 45
LCD9 / KS9 46
LCD8 / KS8 47
LCD7 / KS7 48
LCD6 / KS6 49
LCD5 / KS5 50
LCD4 / KS4 51
19 PA3 / SCK
18 PA2 / SI
17 PA1 / FMIF
16 PA0 / AMIF
15 PC3
14 PC2
13 PC1
12 PC0
11 PD3
10 PD2
9 PD1
8 VDD2
7 CE
6 VCOH
5 VCOL
4 VDD1
3 ED2
2 ED1
1 NC
52 LCD3 / KS3
53 LCD2 / KS2
54 LCD1 / KS1
55 LCD0 / KS0
56 COM0
57 COM1
58 GND
59 K3
60 K2
61 K1
62 K0
63 AD
64 INT

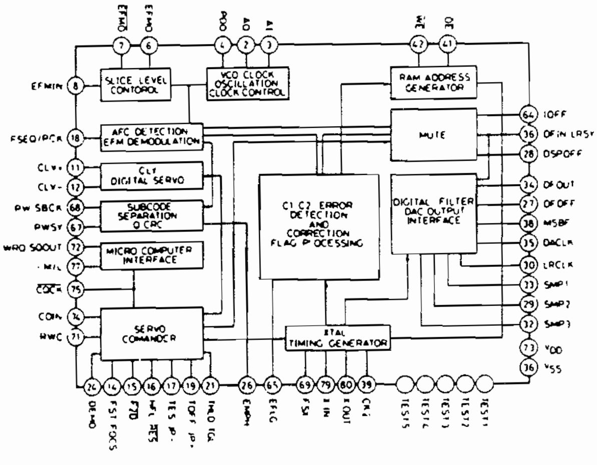
IC501 CXP5078H012 (C-MOS 4-Bit 1-Chip Micro Processor)


80 LNOO4
79 LSHX
78 MUTE
77 CLVGAIN
76 SL FOWAD
75 SL BACK
74 VREF
73 TEX
72 NC
71 TX
70 VSS
69 LDON
68 P CON2
67 P CON1
66 XRST
65 TIM-OUP
LED
1
2 PCON2
3 LDON
4
5 14
6 13
7 12
8 11
9 10
10 9
11 8
12 7
13 6
14 5
15 4
16 3
17 2
18 1
19 SEG0
20 COM1
21 2
22 3
23 4
24 VLC1
25 VLC2
26 VLC3
27 VL
28 RMC
29 THLD
30 XTAL
31 EXTAL
32 RST
33 NC
34 VDD
35 AD0
36 AD1
37 AD2
38 DRF
39 RCLK
40 RDATA RMC
41
42 WRQ
43 P/E
44 COCK
45 COIN
46 SOOUT
47 CLOCK SET
48 SLEEP EDGE
49 SW ON
50 TIMX60
51 TIMER
52 SLEEP
53 OPEN/CLOSESW
54 CD
55 RMC IN/OUT
56 LIMIT
57 REC-DIRC
58 SYNC-REC
59 PULL UP
60
61 SUM3
62 12/24H
63 VOL DOWN
64 VOL UP

CXP5078H-012Q
Pins Function of IC501

Pin No.	Pin name (Symbol)	Function name	I/O	Description
1	SEG18/PG1	$\overline{\text{PCON1}}$	O	PC1 reverse output
2	SEG17/PG2	$\overline{\text{PCON2}}$	O	PC2 reverse output
3	SEG16/PG3	$\overline{\text{LDON}}$	O	PC3 reverse output
4	SEG15		O	LCO segment driver output (Non)
5	SEG14		O	LCD segment driver output (PROG, PLAY, REP, SPAC)
6	SEG13		O	LCD segment driver output (SECOND one figure)
7	SEG12		O	LCD segment driver output (SECOND one figure)
8	SEG11		O	LCD segment driver output (SECOND ten figures)
9	SEG10		O	LCD segment driver output (SECOND ten figures)
10	SEG9		O	LCD segment driver output (MINUTE one figure)
11	SEG8		O	LCD segment driver output (MINUTE one figure)
12	SEG7		O	LCD segment driver output (MINUTE ten figures)
13	SEG6		O	LCD segment driver output (MINUTE ten figures)
14	SEG5		O	LCD segment driver output (TRACK one figure)
15	SEG4		O	LCD segment driver output (TRACK one figure)
16	SEG3		O	LCD segment driver output (TRACK ten figures)
17	SEG2		O	LCD segment driver output (TRACK ten figures)
18	SEG1		O	LCD segment driver output (SLEEP, TIMER)
19	SEG0		O	LCD segment driver output (Non)
20	COM3		O	LCD common signal output
21	COM2		O	LCD common signal output
22	COM1		O	LCD common signal output
23	COM0		O	LCD common signal output
24	VLC1		–	LCD bias drive power supply terminal
25	VLC2		–	LCD bias drive power supply terminal
26	VLC3		–	LCD bias drive power supply terminal
27	VL		O	LCD bias cut (ordinaly "L" output)
28	RMC	RMC	I	Remocon input
29	INT	THLD	I	THLD input from LC7860N
30	XTAL		O	2.097MHz clock output terminal
31	EXTAL		I	2.097MHz clock input terminal
32	$\overline{\text{RST}}$		I	Reset
33	NC		–	No connection
34	VDD		–	+ Power supply terminal
35	PI0/AD0		I	A/D converter input (Ch0)
36	PI1/AD1		I	A/D converter input (Ch1)
37	PI2/AD2		I	A/D converter input (Ch2)
38	PI3/AD3	DRF	I	DRF input from LA9200N
39	PB0/AD4	REM CLK	O	Remocon decoda signal port (Clock signal output)
40	PB1/AD5	REM DATA	I	Remocon decoda signal port (Data signal input)
41	PB2/AD6	RWC	O	RWC output for LC7860N
42	PB3/AD7	WRQ	I	WRQ input for LC7860N
43	NC		–	No connection
44	PX0/SC	CQCK	O	CQCK output for LC7860N
45	PX1/S0	COIN	O	COIN output for LC7860N
46	PX2/S1	SQOUT	I	SQOUT input for LC7860N
47	PA0	SET	I	Key input ("L" active)
48	PA1	SLP EDGE	I	Edge input of sleep key ("L" active)
49	PA2	$\overline{\text{SW ON}}$	I	"ON" input ("L" active)
50	PA3	TIME60	I	Timer F.F ("L" active)
51	PF0	$\overline{\text{TIMER}}$	I	"Timer" input ("L" active)
52	PF1	$\overline{\text{SLEEP}}$	I	"Sleep" input ("L" active)
53	PF2	OPEN/$\overline{\text{CLOSE}}$	I	Open switch input (Open → "H")
54	PF3	$\overline{\text{CD}}$ FUNC	I	CD function input ("L" active)
55	PE0	RMC SEL	I	Remocon decoder outside ("L")/inside select (Open)
56	PE1	$\overline{\text{LIMIT SW}}$	I	Limit switch input ("L" active)
57	PE2	REC DIRC	I	Tape direction input (Forward → "H")
58	PE3	$\overline{\text{SYNC REC}}$	I	Tape record key input (Recording → "L")
59	PY0	PULL-UP	O	Pull-up resistor power for port F
60	PY1/$\overline{\text{PWM}}$		O	Not used
61	PY2/WP	BATTERY	I	Battery check (Yes → "L")
62	PY3/$\overline{\text{EC}}$/RMC	12/24H	I	12/24 hour display select (12H → "L")
63	SEG31/PD0	VOL DOWN	O	Volume down (Low → "H")
64	SEG30/PD1	VOL UP	O	Volume up (High → "H")
65	SEG29/PD2	VOL LED	O	Volume LED (Light up → "L")
66	SEG28/PD3	TIM OUT	O	Power select by timer function (ON → "H")
67	SEG27/PC0	$\overline{\text{XRST}}$	O	RST output for LC7860N (Reset → "L")
68	SEG26/PC1	PCON1	O	Power control 1 (ON → "H")
69	SEG25/PC2	PCON2	O	Power control 2 (ON → "H")
70	SEG24/PC3	LDON	O	Laser control (ON → "H")
71	VSS		–	GND.
72	TX		O	32.768kHz clock output
73	NC		–	No connection
74	TEX		I	32.768kHz clock input
75	VREF		I	No connection
76	SEG23/PH0	SLED IN	O	Sled control (Disc inside direction shift → "H")
77	SEG22/PH1	SLED OUT	O	Sled control (Disc outside direction shift → "H")
78	SEG21/PH2	CLV GAIN	O	CLV gain select (8cm disc play → "H")
79	SEG20/PH3	MUTING	O	Audio analogue mute ("H" = mute)
80	SEG19/PG0	$\overline{\text{XRST}}$	O	PCO reverse output

IC551 LC7860K (Digital Signal Processor)


EFMO
EFMO
PDO
AO
A1
WE
OE
EFMIN
SLICE LEVEL CONTOROL
VCO CLOCK OSCILLATION CLOCK CONTROL
RAM ADDRESS GENERATOR
FSEQ/PCK
AFC DETECTION EFM DEMODULATION
MUTE
CLV+
CLV-
CLV DIGITAL SERVO
PW SBCK
PWSY
SUBCODE SEPARATION Q CRC
WRQ SQOUT
MICRO COMPUTER INTERFACE
$\overline{\text{CQCK}}$
COIN
RWC
SERVO COMANDER
C1 C2 ERROR DETECTION AND CORRECTION FLAG PROCESSING
DIGITAL FILTER DAC OUTPUT INTERFACE
XTAL TIMING GENERATOR
IOFF
OF IN LRSY
DSPOFF
OF OUT
OF OFF
MSBF
DACLK
LRCLK
SMP1
SMP2
SMP3
VDD
VSS
DEMO
FST FOCS
FZD
HFL $\overline{\text{RES}}$
TES JP-
TOFF JP+
THLD TGL
EMPH
EFLG
FSX
X IN
X OUT
CK2
TEST5
TEST4
TEST3
TEST2
TEST1
7
6
4
2
3
42
41
8
18
11
12
68
67
72
77
75
74
71
64
36
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21
26
65
69
79
80
39

IC BLOCK DIAGRAM

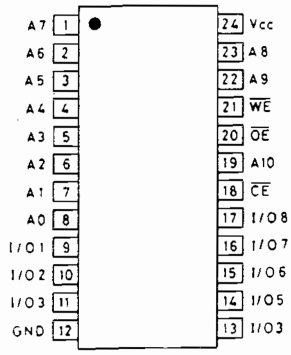
IC551 LC7860KA (Digital Signal Processor)

Pin Function

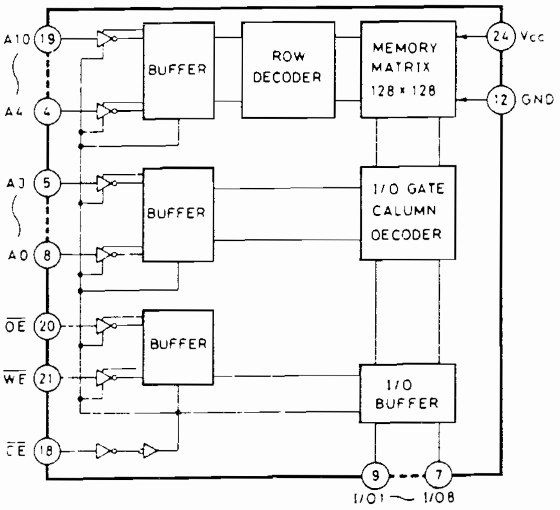
Pin No	Pin Name	I/O	Functions	
1	TEST1	I	–	Test pin. Normally not connected.
2	AO	O	–	VCO is generated by connecting resonance circuit between AI and AO. (8 6436MHz) is phase output with EFM signal, and is set to increase frequency when +".
3	AI	I	–	
4	PDO	O	–	
5	Vss	–	–	GND
6	EFMO	O	–	1 to 2Vpp HF signal is input to EFMIN. Output from EFMO and BFMO passes through amplitude limiter and reverse phase EFM signal is obtained from both. This performs slice level control.
7	$\overline{\text{EFMO}}$	O	–	
8	EFMIN	I	–	
9	TEST2	I	–	Test pin. Normally not connected.
10	VDD	-	–	+5V
11	CLV+	O	–	Disk motor control output
12	CLV–	O	–	
13	FOCS	O	–	Focus servo is off when FOCS is HIGH. The lens is lowered by FST and then FST is HIGH, the lens is gradually pulled up. FOCS is reset when FZD is generated. For focus-in.
14	FST	O	–	
15	FZD	I	–	
16	HFL	I	*1	*1 Kick pulses, JP+ and JP–, are generated according to track jump command. A jump of the pre-scribed number of tracks is (1, 4, 16 64). *2 When 4.3218MHz PCK monitor terminal/DEMO is HIGH both SYNC detected from EFM signal and SYNC of counter are the same at HIGH.
17	TES	I	*1	
18	FSEQ/PCK	O	*2	
19	TOFF	O	*1	
20	TGL	O	*1	
21	THLD	O	*1	
22	JP+	O	*1	
23	JP–	O	*1	
24	DEMO	I	–	Set and sount output adjustment pin function.
25	TEST3	I	–	Test pin. Normally not connected.
26	EMPH	O	–	De-emphasis is necessary when HIGH.
27	DFOFF	I	–	ON/OFF switch for digital filter. No filtering when HIGH.
28	DSPOFF	I	–	Test pin Normally not connected.
29	SMP2	O	*3	*3 Signal output to DAC and signal for L/R switching and sample hold. *4 +5V *5 Signal output for CDROM *6 CDROM sync signal
30	LRCLK	O	*3	
31	VDD	–	*4	
32	SMP3	O	*3	
33	SMP1	O	*3	
34	DFOUT	O	*3	
35	DACLK	O	*3	
36	DFIN	I/O	*5	
37	LRSY	O	*6	
38	MSBF	I	*3	
39	CK2	O	–	2.1609MHz
40	AD10	O	*7	*7 RAM address output *8 Output state when WE = L and input state when WE = H. OE is for input/outptu control.
41	AD10	O	*8	
42	OE	O	*8	
43	AD9	O	*7	

Pin No.	Pin Name	I/O	Functions	
44	AD8	O	*7	*7 RAM address output *8 Output state when WE = L and input state when WE = H. OE is for input/output control.
45	AD7	O	*7	
46	AD6	O	*7	
47	AD5	O	*7	
48	AD4	O	*7	
49	AD3	O	*7	
50	AD2	O	*7	
51	AD1	O	*7	
52	AD0	O	*7	
53	DB7	I/O	*9	*9 DB7 to DB0: connected to RAM data pins. *10 GND
54	DB6	I/O	*9	
55	DB5	I/O	*9	
56	Vss	–	*10	
57	DB4	I/O	*9	
58	DB3	I/O	*9	
59	DB2	I/O	*9	
60	DB1	I/O	*9	
61	DB0	I/O	*9	
62	TEST4	I	–	Test pin. Normally not connected
63	TEST5	I	–	
64	IOFF	I	–	For CD ROM. HIGH time interpolation and holding of previous value not performed.
65	EFLG	O	–	C1/C2 1-level and 2-level error correction
66	PW	O	–	PWSY is SYNC combining main and sub and change from HIGH to LOW is taken externally. The P, Q, R, S, T, U, V, and W subcodes are read by sending 8 clock pulses to SBCK.
67	PWSY	O	–	
68	SBCK	I	–	
69	FSX	O	–	7.35kHz sync signal output
70	WRQ	O	*11	*11 WRQ goes HIGH when data of subcode Q passes CRC check. This is taken externally and the data from SQOUT is read by sending CQCK. When data is required with LSB first, M/L is driven LOW. After the micro-processor sets RWC to HIGH, the command is given by output synchronized with the CQCK command data. *12 Goes LOW once when power is turned on.
71	RWC	I	*11	
72	SQOUT	O	*11	
73	VDD	–	*11	
74	COIN	I	*11	
75	CQCK	I	*11	
76	RES	I	*12	
77	M/L	I	*11	
78	Vss	–	–	GND
79	XIN	I	–	Pin for connection to 8.6436MHz crystal oscillator
80	XOUT	O	–	

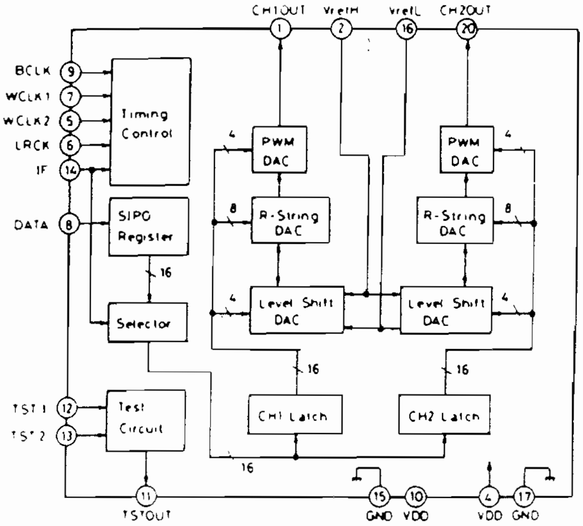
IC552 LC3517BS15 (Static RAM 2K Word x 8-Bit High-Speed C-MOS)

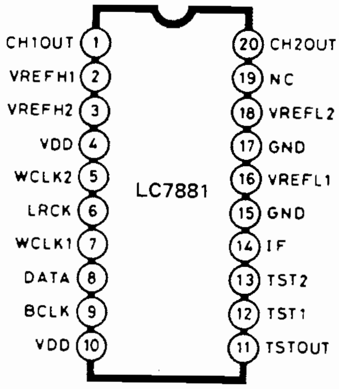


TERMINAL NAME	TERMINAL DESCRIPTION
A0 - A10	ADDRESS INPUT
I/O1 I/O8	DATA INPUT / OUTPUT
$\overline{\text{CE}}$	CHIP ENABLE INPUT
$\overline{\text{WE}}$	WRITE ENABLE INPUT
$\overline{\text{OE}}$	OUTPUT ENABLE INPUT
Vcc	+5V POWER SOURCE
GND	GROUND



IC980 LC7881 (16-bit D-A Converter for CD)

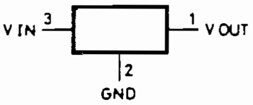

CH1OUT
VrefH
VrefL
CH2OUT
1
2
16
20
BCLK 9
WCLK1 7
WCLK2 5
LRCK 6
IF 14
DATA 8
Timing Control
SIPO Register
16
Selector
PWM DAC
R-String DAC
Level Shift DAC
4
8
4
16
CH1 Latch
CH2 Latch
TST1 12
TST2 13
Test Circuit
16
11 TSTOUT
15 GND
10 VDD
4 VDD
17 GND


CH1OUT 1
VREFH1 2
VREFH2 3
VDD 4
WCLK2 5
LRCK 6
WCLK1 7
DATA 8
BCLK 9
VDD 10
LC7881
20 CH2OUT
19 NC
18 VREFL2
17 GND
16 VREFL1
15 GND
14 IF
13 TST2
12 TST1
11 TSTOUT

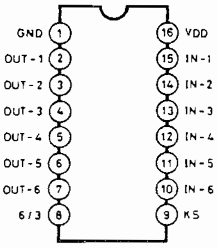
Pins Functions of IC981 (LC7881)

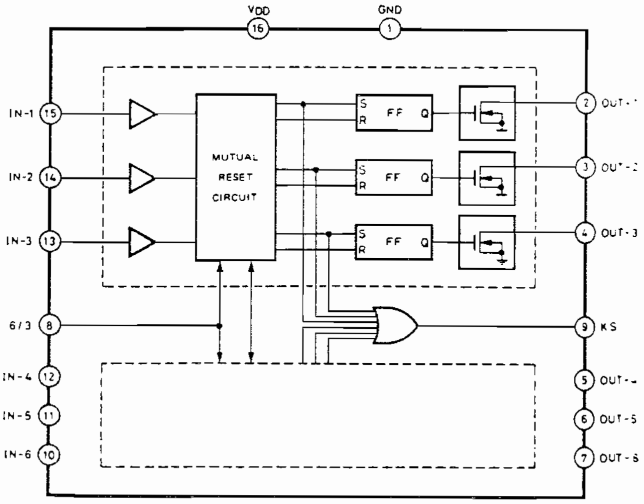
Pin No.	Pin name (Symbol)	Description
1	CH1OUT	Output Terminal of CH-1.
2	VrefH1	Input Terminal of Reference Voltage "H".
3	VrefH2	No Connection
4	VDD	+5V Power Supply Terminal.
5	WCLK2	Input Terminal of Word-Clock 2. When IF is in "L", internal signal for latching CH-1 data of digital signal is made by using trailing edge WCLK2. When IF is in "H", it needs WCLK2 to "L".
6	LRCK	Input Terminal of LR Clock. Indicates CH-1 and CH-2 of input digital audio data : indicate CH-1 when LRCK is in "H". indicate CH-2 when LRCK is in "L".
7	WCLK1	Input Terminal of Word-Clock 1. When IF is in "L", internal signal for latching CH-2 data of digital signal is made by using trailing edge of WCLK1. When IF is in "H", internal signal for latching CH-1 and CH-2 data of digital signal is made by trailing edge of WCLK1.
8	DATA	Input Terminal of Digital Audio Data. When IF is in "L", digital audio data is input in bit serial from LSB. When IF is in "H", digital audio data is input in bit serial from MSB.
9	BCLK	Bit-Clock Terminal. This clock is for reading digital audio data into LSI in bit serial and is for PWMDAC.
10	VDD	+5V Power Supply Terminal.
11	TSTOUT	Output Terminal for Testing. Ordinarily, leave this terminal open.
12	TST1	Input Terminal for Testing. Ordinarily, ground these terminals.
13	TST2	Input Terminal for Testing. Ordinarily, ground these terminals.
14	IF	Interface Select Terminal. When IF is in "L", digital audio data is input from LSB side. When IF is in "H", digital audio data is input from MSB side.
15	GND	Ground Terminal
16	VrefL1	Input Terminal of Reference Voltage "L".
17	GND	Ground Treminal
18	VrefL2	No Connection
19	NC	No connection
20	CH2OUT	Output Terminal of CH-2

IC981 M5278D05
IC982 M5278L56 (Voltage Regulator)


VIN 3
1 VOUT
2
GND

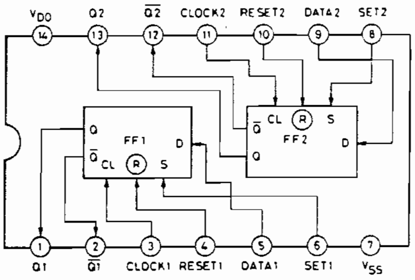
IC601 TC9135P (Reset Touch Switch)


GND 1
OUT-1 2
OUT-2 3
OUT-3 4
OUT-4 5
OUT-5 6
OUT-6 7
6/3 8
16 VDD
15 IN-1
14 IN-2
13 IN-3
12 IN-4
11 IN-5
10 IN-6
9 KS


VDD 16
GND 1
IN-1 15
IN-2 14
IN-3 13
6/3 8
IN-4 12
IN-5 11
IN-6 10
MUTUAL RESET CIRCUIT
S
R
FF
Q
2 OUT-1
3 OUT-2
4 OUT-3
9 KS
5 OUT-4
6 OUT-5
7 OUT-6

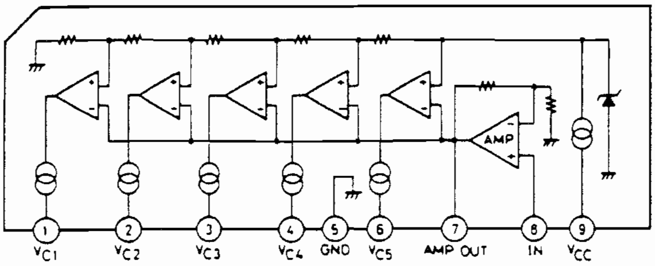
IC BLOCK DIAGRAM

IC602 LC4013B (Dual D-type Flip-flop)



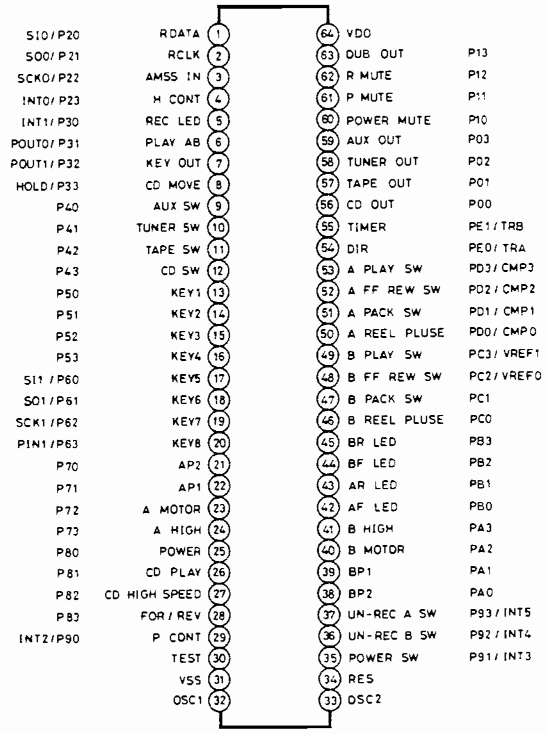
VDD
Q2
$\overline{Q2}$
CLOCK2
RESET2
DATA2
SET2
FF1
FF2
Q
$\overline{Q}$
CL
R
S
D
Q1
$\overline{Q1}$
CLOCK1
RESET1
DATA1
SET1
VSS

IC603 LB1433N (Level Meter)



AMP
VC1
VC2
VC3
VC4
GND
VC5
AMP OUT
IN
VCC

IC651 LC66506B-4213

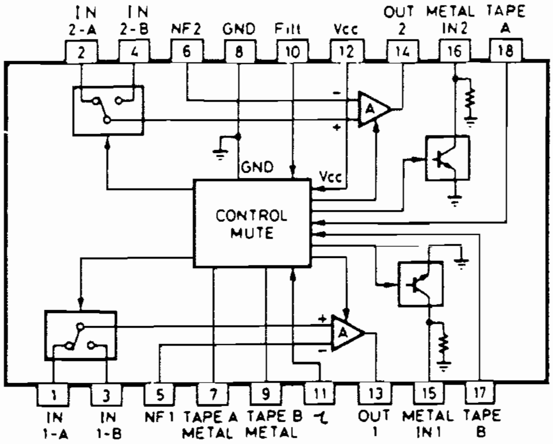


SI0/P20 RDATA 1
SO0/P21 RCLK 2
SCK0/P22 AMSS IN 3
INT0/P23 H CONT 4
INT1/P30 REC LED 5
POUT0/P31 PLAY AB 6
POUT1/P32 KEY OUT 7
HOLD/P33 CD MOVE 8
P40 AUX SW 9
P41 TUNER SW 10
P42 TAPE SW 11
P43 CD SW 12
P50 KEY1 13
P51 KEY2 14
P52 KEY3 15
P53 KEY4 16
SI1/P60 KEY5 17
SO1/P61 KEY6 18
SCK1/P62 KEY7 19
PIN1/P63 KEY8 20
P70 AP2 21
P71 AP1 22
P72 A MOTOR 23
P73 A HIGH 24
P80 POWER 25
P81 CD PLAY 26
P82 CD HIGH SPEED 27
P83 FOR/REV 28
INT2/P90 P CONT 29
TEST 30
VSS 31
OSC1 32
64 VDD
63 DUB OUT P13
62 R MUTE P12
61 P MUTE P11
60 POWER MUTE P10
59 AUX OUT P03
58 TUNER OUT P02
57 TAPE OUT P01
56 CD OUT P00
55 TIMER PE1/TRB
54 DIR PE0/TRA
53 A PLAY SW PD3/CMP3
52 A FF REW SW PD2/CMP2
51 A PACK SW PD1/CMP1
50 A REEL PLUSE PD0/CMP0
49 B PLAY SW PC3/VREF1
48 B FF REW SW PC2/VREF0
47 B PACK SW PC1
46 B REEL PLUSE PC0
45 BR LED PB3
44 BF LED PB2
43 AR LED PB1
42 AF LED PB0
41 B HIGH PA3
40 B MOTOR PA2
39 BP1 PA1
38 BP2 PA0
37 UN-REC A SW P93/INT5
36 UN-REC B SW P92/INT4
35 POWER SW P91/INT3
34 RES
33 OSC2

	K 3	K 2	K 1	K 0
PB0	M4	M3	M2	M1
PB1	BAND	M6	M6	MS
PB2	UP	DOWN	MEMORY	AUTO MEMORY (APT)
PB3	INDICATION ON/OFF	9/10k	MODE 1	MODE 0

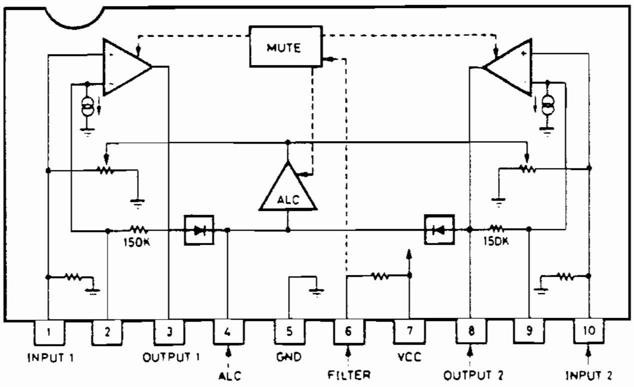
OUT PUT PORT	BAND	FM	AM	TV 1 ~ 3ch	TV 4 ~ 12ch	TV 13 ~ 62ch
PD2	VL	H	L	H	L	L
PD3	VH	L	L	L	H	L
PC0	UHF	L	L	L	L	H
PC1	AM	L	H	L	L	L
PC2	BM	H	L	H	H	H
PC3	CONT1	L	L	H	H	H

IC901 BA3416L (Low Noise Dual-amp.)



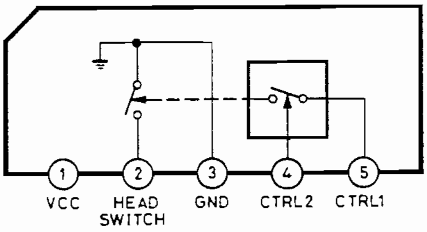
IN 2-A
IN 2-B
NF2
GND
Filt
Vcc
OUT 2
METAL IN2
TAPE A
2
4
6
8
10
12
14
16
18
A
GND
Vcc
CONTROL MUTE
A
1
3
5
7
9
11
13
15
17
IN 1-A
IN 1-B
NF1
TAPE A METAL
TAPE B METAL
τ
OUT 1
METAL IN1
TAPE B

IC902 BA3312N (Record Amp.)



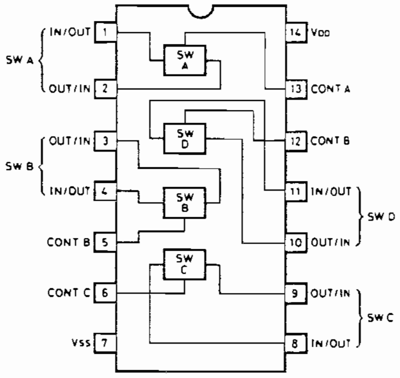
MUTE
ALC
150K
150K
1
2
3
4
5
6
7
8
9
10
INPUT 1
OUTPUT 1
ALC
GND
FILTER
VCC
OUTPUT 2
INPUT 2

IC903 BA7755 (Switching)



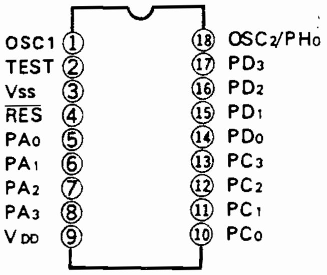
1
2
3
4
5
VCC
HEAD SWITCH
GND
CTRL2
CTRL1

IC904, 905 LC4066B (Quad Bilateral Switch)

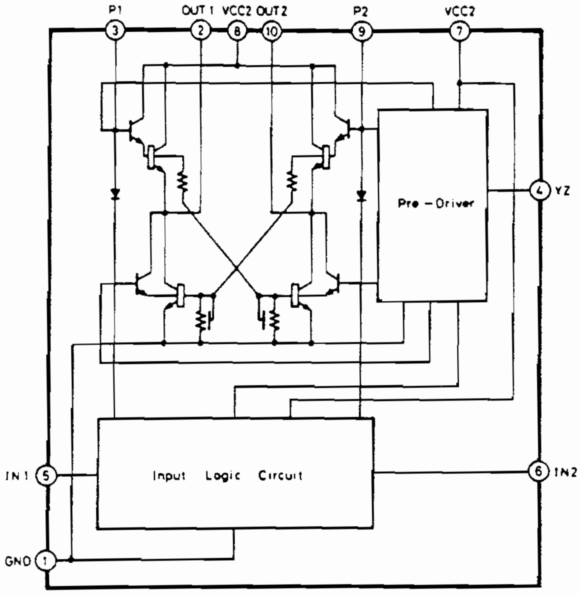


SW A
IN/OUT 1
OUT/IN 2
SW B
OUT/IN 3
IN/OUT 4
CONT B 5
CONT C 6
VSS 7
14 VDD
13 CONT A
12 CONT B
11 IN/OUT
10 OUT/IN
SW D
9 OUT/IN
8 IN/OUT
SW C
SW A
SW D
SW B
SW C

IC906 LC6527C (C-MOS 4 Bit 1 Chip Micro Computor)

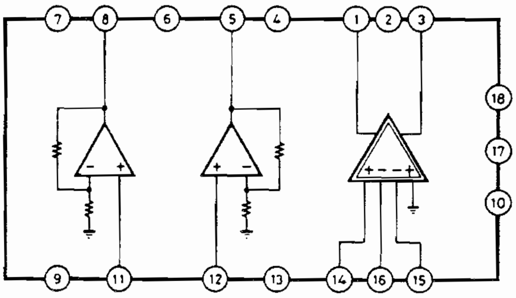

OSC1 ①
TEST ②
Vss ③
RES ④
PA0 ⑤
PA1 ⑥
PA2 ⑦
PA3 ⑧
VDD ⑨
⑱ OSC2/PH0
⑰ PD3
⑯ PD2
⑮ PD1
⑭ PD0
⑬ PC3
⑫ PC2
⑪ PC1
⑩ PC0

IC907 BA6209N (Tape Mechanism Motor Driver)

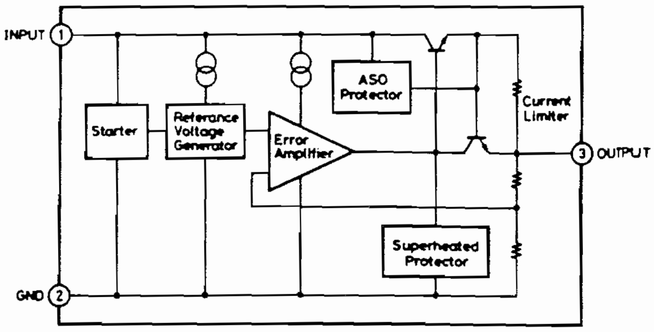

P1
3
OUT 1
2
VCC2
8
OUT 2
10
P2
9
VCC2
7
Pre - Driver
4
YZ
Input Logic Circuit
IN 1
5
6
IN2
GND
1

Input		Output		Action
IN 1	IN2	OUT 1	OUT 2	
0	0	0	0	Brake
1	0	1	0	Normal (Reverse) Rotary
0	1	0	1	Reverse (Normal) Rotary
1	1	0	0	Brake

IC909 LA4630N (3 Dimension Power IC)


7
8
6
5
4
1
2
3
18
17
10
9
11
12
13
14
16
15

IC910 L78M05 (5V Regulated Power Supply)


INPUT
1
Starter
Referance Voltage Generator
Error Amplifier
ASO Protector
Current Limiter
3
OUTPUT
Superheated Protector
GND
2

SANYO

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Osaka, Japan

Dec./'89/1000 NS Printed in Japan